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# INVESTMENT ANALYSIS

BY

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## PREFACE

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This book is designed both for the student of investments and for the investor himself, to each of whom the fundamental principles underlying the theory and practice of investing are important. The investor has a claim against or an interest in the issuer as evidenced, respectively, by the ownership of a bond or shares of stock. He is interested in the nature and the value of his claim or interest.

This book is divided into two parts. the nature of investments, and the analysis of corporate financial statements. The first part of the book discusses bonds, stocks, securities markets, and security market operations with which the investor should be familiar. Since the return on an investment represents the relation between the capital invested and the income received, attention is given to prices and yields of securities by a discussion of investment mathematics. Federal legislation of recent years has made especially necessary a description of the methods by which new security issues are offered to the public. Since the investor is faced with the practical problem of formulating and following an investment policy and program adapted to his individual needs, investment policies are discussed in a separate chapter. The securities available for him may be classed as those of public issuers and those of private corporate issuers. The nature of the public issues is described in chapters on the obligations of the federal government, state governments, and municipal governments.

The presentation of private corporate securities is somewhat different from the usual practice of discussing railroad, public utility, and industrial securities separately. The basic source of information available to the investor is the official report of the company. The presentation of railroad, public utility, and industrial securities followed in this book is based on the belief (a) that the financial statement of the company presents a picture of the nature of the operations of the company and can be made more understandable

if interpreted in terms of those operations, (b) that the investor is seeking essentially the same kind of information in the analysis of a company whether it is a railroad, public utility, or industrial company, and (c) that there are probably more elements of similarity than of dissimilarity in the methods of applying accepted tests of investment quality.

For these reasons the presentation first seeks to establish an understanding of the basic significance of the financial statements and of the operations of the company by a discussion of the income statement, the balance sheet, the statement of surplus, and the reserves which the company has established. On the basis of the financial statements, as interpreted, the presentation seeks to determine the company's working capital position, its maintenance and depreciation policy, the relation of its fixed capital investment and its capital structure, and the earning power as evidenced by an analysis of the income statement.

In order that the reader might find continuity in the analysis, the same companies are used in each discussion, with variations illustrated by data from other companies. Such presentation should permit him to follow each computation back to its original source in the financial statement. The practice sometimes followed of illustrating each calculation with a new example limits the reader to the data presented in the illustration and does not afford him an opportunity to determine the source of the data. The analyses of a bank statement and of a fire insurance company statement are treated in separate chapters.

The frequent changes in security market procedure add to the difficulties of keeping a book on the subject up to date in every respect. The attention of the reader is directed to two important changes recently made by the New York Stock Exchange. Effective July 1, 1946, the Exchange revised the schedule of listing fees. The new fee is \$50 for each 10,000 shares listed up to 2,000,000 shares and \$25 for each 10,000 shares in excess of 2,000,000 shares. Effective August 29, 1946, the Exchange changed the delivery date for all securities, except those of the United States Government, sold "regular way." Under the new plan, securities are deliverable by 12:30 P.M. instead of by 1:45 P.M., and on the third instead of the second full business day following the sale. Under the three-day delivery plan, stocks sell ex-dividend on the second instead of the first full business day preceding the record date.

The author gratefully acknowledges the many helpful suggestions

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JOHN H. PRIME



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## CHAPTER ONE

# INTRODUCTION

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**Investment.** Investment is the productive employment of capital. The investor relinquishes his capital for employment by the issuer of a security in exchange for either a creditor's claim, as evidenced by a bond, or an owner's interest, as evidenced by a share of stock. The investor's primary purpose in making the commitment is to receive a return. The qualification "productive" does not refer to the nature of the use made of the capital but rather to the production of a return on the capital to the investor. A loan made to the federal government through the purchase of a government bond is productive to the bondholder even when the government borrows the funds in order to finance a budgetary deficit. So long as a bond or a share of stock yields a return to the investor it is "productive." A true investment produces income to the security holder.

**Risk.** Every commitment of capital involves risk. One security differs from another security not in the absence or presence of risk but rather in the degree of risk incurred. Although there is no clear line of demarcation between the investor and the speculator, there are some general differentiating characteristics. The investor wishes to reduce the degree of risk to a minimum whereas the speculator openly accepts a high degree of risk. The investor expects to keep his capital invested in the security for a longer period than the speculator who plans to dispose of the security within a more limited period. The investor is satisfied with the receipt of regular income in contrast with the speculator to whom profit through appreciation in value is more important. Since the return must be consistent with the degree of risk, the investor in seeking a low degree of risk must accept a moderate return, whereas the speculator expects either a high income or capital appreciation as compensation for the high degree of risk which he assumes.

**Capital market.** The demand for capital arises from public borrowers such as federal, state, and municipal governments and from private

issuers such as railroad, public utility, industrial, financial, and real estate companies. In general, the sources of capital to a corporation may be classed as internal or external. The internal source refers to accumulated surplus earnings which are available for reinvestment by the corporation. A corporation which has built up a surplus from the earnings of past years may utilize that surplus to finance expansion. The external source refers to the capital market which supplies funds through the purchase of new securities. A corporation in need of capital may seek to obtain it through the sale of securities in the capital market.

**New and refunding capital.** The capital sought by a corporation may be for new capital or for refunding purposes. New capital demand represents the need for additional capital to finance the expansion of a company. A company that plans to construct new plants, buy new equipment, or finance expanding inventories may sell a bond or stock issue and thereby bring new capital into the company. The Dayton Rubber Manufacturing Company, for example, sold 50,000 shares of common stock in order to finance the completion of its plant expansion program. American Tobacco Company issued \$200,000,000 of debentures in order to finance rising dollar volume of leaf tobacco.

The demand for refunding purposes represents the raising of capital to retire existing obligations. A company may retire an existing 4 per cent bond issue with the proceeds of a new issue of  $3\frac{1}{2}$  per cent bonds or may retire a maturing obligation by the sale of a new issue. Armour & Company, for example, redeemed its series B and C 4 per cent first mortgage bonds from the proceeds of the sale of a series E  $3\frac{1}{4}$  per cent first mortgage bonds and  $2\frac{1}{4}$  per cent serial promissory notes. Kansas City Southern Railway, anticipating maturing obligations, of which the principal issue was the \$26,950,000 first mortgage 3's of April 1, 1950, prepared to meet these maturities by the issuance of \$40,000,000 of first mortgage 4's due in 1975 and \$6,000,000 of  $2\frac{3}{8}$  per cent serial notes. A refunding operation does not bring new or additional capital into the company but simply replaces one issue with another.

**Bonds and stocks.** Capital is obtained through the sale of bonds or stocks. The sale of stock as a means of raising capital is usually popular during periods of business expansion; bonds are more commonly employed in periods of business stagnation.

**Sources of capital.** Basically the true source of capital is the savings capacity of the people and is limited only by their ability

and willingness to accumulate capital. New capital is created in any community that produces more than it consumes. Producers of capital are induced to limit consumption in order to provide a surplus and are willing to supply capital because of either a time preference or a savings incentive. A time preference influences those who believe that the surplus will be more valuable to them at a future time and who are willing, therefore, to postpone immediate consumption and to put their capital to productive use in the interim. A savings incentive influences those who are attracted by the regular receipt of a payment for the use of their capital and who are willing, therefore, to put it to productive use in order to obtain an income.

**Investment channels.** Those savings reach the capital market either directly through the purchase of securities or indirectly through the deposit of the savings with such financial institutions as savings banks, savings and loan associations, and life insurance companies. Investors who seek to invest their capital directly may purchase newly issued securities or securities that are outstanding in the market. Those securities may be purchased either on a national securities exchange or in the over-the-counter market. The capital placed with savings institutions and with life insurance companies finds its way into the capital market through the purchase of securities by those institutional investors.

**Problem of the investor.** The investor who seeks productive employment for his capital is faced with the problem of selecting securities that will provide for him an adequate degree of safety of this principal and a stable income. He has his choice of accepting the position of a creditor by the purchase of bonds or of an owner through the purchase of stock. As a bondholder he has a claim against the issuer, but the nature of his claim will depend upon the terms of the investment contract which are stated in the indenture under which the bonds have been issued. On the other hand, as a stockholder he is an owner and as such has an interest in, rather than a claim against, the corporation. His problem, therefore, is to determine the degree of safety of principal and of income offered by the particular security and to select the security that meets his financial needs.

### Review Questions

1. Define "investment."
2. Distinguish between "investment" and "speculation."
3. Name the sources of demand for capital.



4. Distinguish between internal and external sources of capital.
5. Distinguish between new capital and refunding capital.
6. Name the types of securities issued by corporations.
7. Discuss the true source of capital.
8. Distinguish between the time preference and the savings incentive factors in the accumulation of capital.
9. Discuss two ways in which savings reach the capital market.
10. Distinguish between newly issued securities and outstanding securities.
11. Discuss the way in which capital placed with savings institutions and life insurance companies reaches the capital market.
12. Discuss the problem of the investor.

### Assignment

- (a) A company raised \$50,000,000 on May 1, 1946, through the issue of a 3 per cent debenture bond due May 1, 1975. On the basis of the following data indicate whether this represented new or refunding capital. (000)

	<i>Before</i>		<i>After</i>
Funded Debt . . . . .	4½'s, due June 1, 1946	\$30,000	3's of 1975 \$50,000
Plant Account . . . . .		10,000	18,000
Working Capital . . . . .		35,000	47,000

- (b) In a recent year \$2,885,000,000 of new securities were issued and the proceeds used for the following purposes.

Additions to plant and equipment . . . . .	\$ 224,000,000
Retirement of bonds and notes . . . . .	1,972,000,000
Additions to working capital . . . . .	351,000,000
Retirement of preferred stocks . . . . .	338,000,000

Indicate the amounts that represented new capital and refunding capital, respectively.

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## CHAPTER TWO

### BONDS

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**Introduction.** A bond is an evidence of debt under which the issuer agrees to repay the principal at a stated future date and to pay interest at a stipulated annual rate during the life of the bond. The West Texas Utilities Company first mortgage series A bonds, for example, were issued in 1943 and are due August 1, 1973. Interest is payable at the annual rate of  $3\frac{1}{8}$  per cent. Each bond represents part of a large issue that has been divided into small units for convenience in distribution. While the usual face amount of a bond is \$1,000, as in the West Texas Utilities issue, some bonds are also issued in smaller denominations. The Mengel Company  $3\frac{3}{4}$  per cent bonds of 1959 were issued in denominations of \$1,000 and \$500.

**Interest payments.** Interest payments at the fixed annual rate stated on the bond are usually made semi-annually. Although the interest payment dates may be January 1 and July 1, as in the instance of Socony-Vacuum Oil Company debenture 3's of 1964, the following compilation indicates the variation found in other bonds:

- |                           |   |
|---------------------------|---|
| January 15 and July 15 —  | Pennsylvania Railroad equipment<br>4's, series E, 1936-1949   |
| March 1 and September 1 — | California-Arizona Lines first and<br>refunding mortgage $4\frac{1}{2}$ 's, series A<br>and B, 1962 |
| April 1 and October 1 —   | Pacific Telephone & Telegraph re-<br>funding mortgage "B" $3\frac{1}{4}$ 's, 1966                   |
| May 1 and November 1 —    | Public Service Corporation of New<br>Jersey Perpetual Interest Bear-<br>ing 6's                     |
| June 1 and December 1 —   | Duquesne Light Company first<br>mortgage $3\frac{1}{2}$ 's, 1965                                    |

Interest payment is made either upon presentation of the appropriate coupon (for coupon bonds) or by check sent directly to the bondholder by the issuer (for registered bonds).<sup>1</sup>

**Bondholder's claim.** The basic relationship between the issuer and the bondholder is that of debtor and creditor. The bondholder is a creditor and has a claim against the issuer. The bondholder is confronted with two important problems: (a) the nature of the claim and (b) the value of the claim. The nature of the claim cannot be judged by the title of the bond; it can be determined only by reference to the bond indenture. The indenture states the terms under which the bond was issued. Careful analysis of the indenture reveals the nature and character of the claim. It is especially essential for the bondholder to determine the nature of his claim in the event of default on the part of the issuer. The value of the claim, on the other hand, depends not only upon the nature of the claim but also upon the financial condition of the issuer. For this reason it is even more important that the bondholder measure the ability of the issuer to pay the interest and to repay the principal.

**Classes of bonds.** Bonds may be classed as secured or unsecured obligations. In a secured bond, the issuer reinforces its promise to pay the interest and principal in accordance with the indenture by a pledge of specific property as evidenced in a mortgage bond, a collateral trust note, or an equipment trust certificate or note. In an unsecured or debenture bond, on the other hand, the issuer merely promises to pay the interest and principal as stated in the indenture.

**Deed of trust.** In every corporate bond issue a trustee is appointed by the issuer. The relationship between the issuer and the trustee is expressed in a deed of trust, which sets forth the duties and powers of the trustee and the relation of the trustee to the issuer and to the bondholders. The trustee authenticates the individual bonds and represents the bondholders in the protection of their rights.<sup>2</sup> All mortgages, deeds of trust, and other indentures under which bonds, notes, and other evidences of indebtedness are issued are subject to the Trust Indenture Act of 1939, unless specifically exempt. Under the Act a trustee must be "a corporation organized to do business under the laws of the United States or of any state or territory . . . which is authorized under such laws to exercise

<sup>1</sup> See page 15 for discussion of coupon and registered bonds.

<sup>2</sup> The authentication merely states that the bond is one of the bonds described in the mortgage and deed of trust

corporate trust powers, and is subject to supervision or examination by federal, state or territorial authority.”

The Act is administered by the Securities and Exchange Commission and applies to (a) securities required to be registered under the Securities Act of 1933<sup>3</sup> and (b) securities issued in exchange for other securities of the same corporation or under a reorganization plan approved by a court, which are not required to be registered.

**Mortgage bond.** A mortgage bond is secured by a lien on specific property. The lien granted may be upon all or part of the property owned by the issuer. The lien in public utility and industrial bonds is usually upon all of the issuer's property. For example, Alabama Power Company first mortgage  $3\frac{1}{2}$ 's of 1972 are secured by a mortgage on the entire physical property of the company. Similarly, the B. F. Goodrich first mortgage  $4\frac{1}{4}$ 's of 1956 are a lien on all the company's fixed assets. On the other hand, the lien granted under a railroad bond is usually upon a specific portion of the property. For example, the Lake Shore & Michigan Southern Railway  $3\frac{1}{2}$ 's of 1997, assumed by the New York Central Railroad, are secured by a first lien on 961 miles of road running from Buffalo to Chicago.

**After-acquired clause.** Some corporate mortgage bond indentures contain an “after-acquired” clause which provides that all property “hereinafter acquired” becomes subject to the mortgage. The trust indenture securing Union Electric Company of Missouri first mortgage and collateral trust  $3\frac{3}{8}$ 's of 1971 provides that the bonds are secured by a direct first lien on all the company's properties and franchises “now owned or hereafter acquired.” Under this clause, new property acquired in the ordinary way becomes subject to the mortgage; that is, the mortgage becomes a lien on the new property. In the event the company subsequently places another mortgage on the newly acquired property, the new mortgage would have a lien subordinate to that of the original mortgage whose lien, by virtue of the after-acquired clause, would have rested on the property as soon as it was acquired.<sup>4</sup>

**Senior and junior liens.** Mortgage bonds are either senior or junior liens, depending upon the priority of claim. First mortgage

<sup>3</sup> See Chapter Seven for discussion of registration of securities.

<sup>4</sup> Many methods have been devised whereby the “after-acquired” clause may be circumvented by the use of a purchase money mortgage, by a subsidiary company to acquire new property, by lease of new property instead of direct purchase, or by consolidation of issuer with other companies.

bonds are senior liens, since they have first claim upon both earnings and assets. Duquesne Light Company first mortgage  $3\frac{1}{2}$ 's of 1965 were secured by a first mortgage and lien on all fixed property owned by the company. Junior lien bonds, on the other hand, have a secondary claim upon the corporate property and as such are subordinate to the claims of the senior mortgage. The relative position of bonds, especially junior bonds, is not always clearly indicated by the title. Corporations sometimes employ such ambiguous titles as "general," "unified," "consolidated," "first refunding," or "first leasehold." The order of priority of a specific bond can be determined only by reference to the indenture under which it was issued. Kentucky Utilities Company sinking fund mortgage  $4\frac{1}{2}$ 's of 1955 are secured by a lien on the company's property but are subordinate to the lien held by the first mortgage 4's of 1970. Obviously a senior bond is considered superior to a junior bond of the same company.

Prior lien bonds are bonds that have a lien prior to other bonds. They usually arise out of a corporate financial reorganization. For example, Missouri-Kansas-Texas Railroad has outstanding prior lien bonds series A (1962), series B (1962), series D (1978), and series E (1975), which have a lien on the property prior to the cumulative adjustment mortgage 5's, series A, of 1967. A prior lien bond, however, does not necessarily constitute a senior lien. While it may be senior to some bonds of the issuer, nevertheless it may be junior to other bonds. For example, the Erie Railroad consolidated prior lien 4's of 1957 and 1995 are a senior issue of the company but junior to three issues of a predecessor company which were not disturbed in a reorganization. As a practical matter the Erie prior lien bonds are a fourth lien on the main line of the system.

**Amount of issue.** The principal amount of bonds which may be outstanding under the mortgage is governed by whether the mortgage is (a) closed end, (b) open end, or (c) limited open end.

*Closed end.* Under the closed end type the principal amount of bonds which may be issued under the mortgage is specified in the indenture, and all the bonds are usually issued at the one time. For example, the principal amount of bonds which could be issued under Northern Pacific Railway general lien 3's of 2047 was \$60,000,000. From the standpoint of the bondholder, he knows at the time of issuance the maximum principal amount of bonds that can be secured by his mortgage. At no future time can the company issue additional bonds under the same mortgage and thereby

reduce the original bondholder's proportionate interest. If the issuer needs to borrow additional capital prior to the repayment of those bonds, it may do so but only under a junior mortgage.

*Open end.* For the open end type of mortgage the indenture simply authorizes the issuance of bonds without specifying the maximum principal amount that may be issued. For example, the West Texas Utilities Company first mortgage series A  $3\frac{1}{8}$ 's of 1973 were the initial series of bonds issued under and secured by the indenture. The indenture does not limit the aggregate principal amount of bonds that may be outstanding under the mortgage. The various issues of bonds under the mortgage, though some may be dated years ahead of others, have no priority one over the other; in case of foreclosure, all holders will share *pari passu* in the proceeds. West Texas Utilities Company first mortgage series A  $3\frac{1}{8}$ 's of 1973 rank equally and ratably with all bonds regardless of the series subsequently issued and outstanding under the indenture. From the standpoint of the issuer, it may issue bonds in any amount and at any time it sees fit, so long as it can find purchasers for additional bonds. In most instances, however, the indenture contains escrow provisions which seek to protect the bondholder against an excessive issue of bonds.

*Limited open end.* The limited open end mortgage is a compromise between the closed end and the open end types. It is similar to the closed end in that the indenture specifies the definite maximum principal amount of bonds which may be issued; it is similar to the open end in that the bonds, within the principal amount stated, may be issued in different groups from time to time. If a corporation whose financial plan calls for the raising of \$10,000,000 now and \$15,000,000 four years later were to issue a first mortgage bond for \$10,000,000 now, it could offer no better lien than a second mortgage when it issued \$15,000,000 of bonds four years hence. Under the limited open end mortgage authorizing a first mortgage for \$25,000,000, the corporation may issue \$10,000,000 of bonds now and four years hence it may issue an additional \$15,000,000 of bonds under the same mortgage, namely a first mortgage. From the standpoint of the bondholder who buys bonds of the original issue, the maximum which may be outstanding under the mortgage is \$25,000,000. The Cudahy Packing Company first mortgage sinking fund 3 per cent, series B, bonds of 1964, for example, were issued under a limited open end mortgage. The indenture authorized \$30,000,000 but the issue of May, 1944, amounted to only

\$14,000,000. Under the indenture, the company was free to issue an additional \$16,000,000 principal amount of bonds under the same mortgage.<sup>5</sup> The rule that "priority in time gives priority in equity" is void, however, in that all the bonds issued under the mortgage, whenever issued, share alike in the proceeds of any foreclosure.

**Collateral trust notes.** A collateral trust note is secured by a pledge of specific securities, in contrast to the mortgage bond, which is secured by a lien on real property. The securities pledged consist of stocks, bonds, or stocks and bonds which are owned by the corporation issuing the collateral trust note. For example, the Alleghany Corporation issued  $3\frac{1}{4}$  per cent convertible notes which were secured by the pledge of 1,100,000 shares of the common stock of the Chesapeake & Ohio Railway, owned by the Alleghany Corporation. The \$30,000,000 of collateral trust notes issued under the indenture were secured by stock having an aggregate value of \$50,595,000 at the time of issue.

The collateral pledged is placed with the trustee to whom title is transferred. The trustee remits to the corporation the income received from the pledged securities and, in the instance of stock, the proxies which may be issued on the stock. In the event of default, the trustee enforces the claim of the bondholders against the pledged securities by directing payment to him of dividends and interest paid on the pledged securities and by revoking proxies on the stock pledged. Provisions defining the trustee's power to sell the collateral at public or private sale upon default by the corporation are included in the trust indenture.

*Changes in collateral.* In some instances the trust indenture may permit the corporation to withdraw part of the collateral upon (a) the substitution of an equivalent amount of cash or other securities of equal quality and value or (b) the retirement of part of the issue. The right to withdraw collateral, for example, was exercised by the Alleghany Corporation when it withdrew \$947,150 principal amount of Terminal Shares  $5\frac{1}{2}$  per cent notes with an appraised value of \$300,000 from the collateral behind the Alleghany 5's of 1950. On the other hand, some collateral trust note indentures do not provide for the release of deposited collateral with the retirement of any part of the notes. In such instances the notes become increasingly well secured by the value of the collateral as the company redeems portions of the issue.

<sup>5</sup> The indenture specified certain limitations under which the company could issue bonds in excess of \$30,000,000.

The investor, however, must give careful consideration to any terms under which substitution may be made for pledged securities. The famous Kreuger & Toll failure revealed the danger of permitting a substitution of securities on a par-for-par basis.<sup>6</sup> The trust indenture may also provide that, in the event of depreciation in the value of the securities pledged, the corporation is required to deposit additional money or securities to make good the deficiency.

*Issuers.* Collateral trust notes are usually issued by holding companies, investment trusts, and finance companies, none of which is in a position to pledge real property required under a mortgage. The nature of the collateral differs somewhat according to the type of issuer. Holding companies usually pledge a few securities in large blocks, whereas investment trusts generally pledge a wide variety of securities in small blocks. Finance companies, on the other hand, customarily pledge their notes and accounts receivable.

*Investment position.* Collateral trust notes as a class do not have a good investment record. The strength of the note lies not so much with the amount of the collateral pledged as with the credit standing of the companies whose securities have been pledged as collateral. This is especially true where the collateral consists of common stocks which, in turn, may be junior securities of a company which has an issue of bonds or preferred stocks outstanding.

**Equipment trust obligations.** Equipment trust obligations are issued to finance the purchase of rolling stock by railroads on the installment plan.<sup>7</sup> They are secured by a lien on the equipment acquired. For example, one series of Pennsylvania Railroad equipment trust certificates was secured by 59 electric freight locomotives, 28 electric passenger locomotives, and 14 electric switching locomotives.

*Maturity.* Equipment trust obligations mature serially. The Pennsylvania Railroad equipment 4's, series F, were dated July 15, 1935; \$485,000 principal matures each January and July 15 from

<sup>6</sup> The Kreuger & Toll world match empire collapsed in 1932 and was followed by the bankruptcy of International Match Corporation, the largest subsidiary of the group. The bankruptcy of International Match was precipitated by the suicide of Ivar Kreuger in Paris on March 12, 1932. The bankrupt's books listed assets of over \$220,000,000, most of which proved to be fictitious. The most valuable assets of the estate had been stolen and squandered by Kreuger. Among the largest of his many defalcations and frauds was the theft of \$50,000,000 of German Government bonds and the forgery of \$102,000,000 of Italian Government bonds which he had used to create a fictitious asset for a subsidiary of International Match.

<sup>7</sup> They also circumvent the after-acquired property clause in the railroad's mortgage indentures and give the holders of the equipment trust obligation a prior lien on the equipment acquired.



January 15, 1939, to January 15, 1954, inclusive. The New York Central Railroad issued 1½ per cent equipment trust certificates in 1945 of which \$750,000 matures on each May 1 from 1946 to 1955.

*Lease plan.* Equipment trust obligations are issued either under the Philadelphia or lease plan, in the form of certificates, or under the conditional sale plan, in the form of notes. Under the lease plan the equipment is leased to the railroad by the trustee who holds title to the equipment. The initial cash payment made to the trustee by the railroad is regarded as "advance rental" and, under the lease, the railroad pays annual rental to the trustee. This annual rental pays interest at a specified rate on the principal outstanding and retires a specific portion of the principal. The annual payments received by investors on the equipment trust certificates are called "dividends." The equipment securing the Pennsylvania Railroad equipment 4's, series F, referred to above, cost \$22,095,362, of which \$4,150,362 was paid in cash and \$17,945,000 was raised through the sale of equipment trust certificates.

Until recently the usual initial payment by the railroad approximated 25 per cent of the cost, the total amount borrowed through equipment trust certificates was about 75 per cent of the cost, and the certificates matured over a period of one to twenty years. Recent issues, however, have been featured by a reduction in the amount of cash payment and in the maturity period. An analysis of 128 issues offered 1939-1941 showed that 104 had one- to ten-year maturities and twenty-four ran from one to fifteen years. In the ten-year issues, sixty-five had less than 25 per cent down payment and thirty-nine had 25 per cent or more. In the twenty-four fifteen-year issues, six had equities of 25 per cent or more and eighteen had less than 25 per cent.

The equipment trust certificates under the lease plan are issued by the trustee. It is usual to attach a plate to each unit of rolling stock securing the issue stating that the owner is the trustee. The railroad obligates itself to keep the equipment in repair, to replace destroyed units, and to pay any taxes levied on the equipment. The railroad usually guarantees the certificates issued by the trustee as to principal and interest. The equipment 4's of 1954 of the Pennsylvania Railroad, for example, are guaranteed as to principal and interest by the Pennsylvania Railroad.

*Conditional sale plan.* Under the conditional sale plan the equipment is purchased from the trustee under a conditional bill of sale whereby title immediately reverts to the trustee in the event of

default. The railroad finances the purchase of the equipment through the issuance of equipment trust notes. The annual payment received by holders of the notes is called "interest."

*Investment position.* Equipment trust obligations are usually regarded as excellent investments because of (a) the essential nature of the property securing the issue; (b) the mobility and divisibility, which facilitate repossession; and (c) the gradual increase in the equity behind the issue, arising from the fact that the debt is retired at a more rapid rate than the depreciation of the property. The excellent record is evidenced by the very small number of instances of default and consequent loss to investors.<sup>8</sup> Receivers and trustees in charge of railroads in insolvency usually continue to pay interest charges on equipment trust obligations while permitting interest on mortgage bonds of the company to remain in default.

**Debenture bonds.** A debenture bond is an unsecured obligation which, unlike the bond secured by a mortgage, by collateral or by equipment, is protected solely by the credit of the issuer. In the event of default, the holder of a corporate debenture may sue the issuer only as a general creditor. Inasmuch as debentures are protected only by a promise to pay, it follows that they can be sold to the public only by issuers who enjoy the highest credit standing. Debenture bonds are issued by governmental bodies (federal, state, and municipal) and may be issued by corporations. The domestic direct obligations of federal, state, and municipal governments are always debentures. Typical of corporate issues is P. Lorillard debenture 3's of 1963, which are a direct obligation of the company but are not secured.

*Priority of claim.* Corporate debentures may be senior or junior claims. Some debenture bonds, in the absence of prior secured obligations, have a senior claim as in the instance of International Business Machines Corporation debenture 2 $\frac{1}{4}$ 's of 1951. Since this company has no secured bonds outstanding, the debentures are a senior issue. A debenture bond, however, is junior to any mortgage bond issued prior to or subsequent to it. For example, the 3 $\frac{3}{4}$  per cent debentures of 1959 issued by the Mengel Company became a senior after the retirement of the first mortgage 4 $\frac{1}{2}$ 's of 1947. Under this debenture indenture, however, any future indebtedness created by the company will rank *pari passu* with the debentures, but if the subsequent debt is secured it will constitute a charge on

<sup>8</sup> The Florida East Coast Railway was the only instance in recent years where holders of equipment trust obligations were required to assume any substantial loss.

the property or assets so pledged prior to the claim of the debentures.

*Covenant of equal coverage.* A corporate debenture bond which may be a senior bond at the time of issue may subsequently become a junior lien as the result of the issuance of a mortgage bond. In order to protect the debenture bondholders against the subsequent subordination of their claim, some debenture indentures contain a covenant of equal coverage. Under this clause, the issuer agrees to secure the debentures ratably with any mortgage bond that may be issued in the future. For example, the indenture under which Lorillard Company issued the debenture 3's of 1963 provided that the company could not mortgage or pledge any property without equally securing those debentures. That clause enables debenture bondholders to become secured bondholders concurrently with any subsequent secured bondholders. In some states, such as Massachusetts, the law requires that debentures be secured equally with any mortgage subsequently placed upon the properties. When, for example, the Boston & Albany Railroad, with several debenture issues outstanding, sold an issue of first mortgage  $4\frac{1}{2}$ 's, the debentures immediately became equally secured under that mortgage.

**Secured v. unsecured bonds.** The bondholder seeks safety of principal and of income which, in the last analysis, depends upon the solvency and the financial stability of the issuer. The holder of a secured bond must bear in mind that the pledging of property is not necessarily assurance that the debt will be paid in full. Foreclosure on the property in the event of default may not yield sufficient proceeds to meet the obligation in full.<sup>9</sup> In comparing debentures as a class with secured bonds as a class, it is apparent that the true test of any bond should be the ability of the obligor to meet its obligations rather than the amount of property securing it. If satisfactory evidence of ability to pay is available, a debenture bond of one company may be as sound as a first mortgage bond of another company.

**Bond features.** While basically a bond is either secured or unsecured, bond indentures also contain other features which are equally important to the bondholder, such as the form of bond, a guarantee of the payment of the interest and principal, the maturity date, stock options, and provisions for the retirement of the bond.

**Form of bond.** The initial delivery of bonds of a new issue is usually in the form of temporary bonds pending the preparation of

<sup>9</sup> The mortgage bondholder becomes a general creditor for the unpaid balance.

the definitive bonds. In the meantime, the temporary bonds are evidence of ownership and may be transferred by sale. When the definitive bonds are ready, they are exchanged for the temporary bonds without charge to the holders of the temporary bonds.

The definitive bonds may be registered or coupon in form. A registered bond is one that is registered in the name of the owner. It may be registered as to principal and interest, which means that the ownership of the bond can be transferred only with the endorsement of the registered owner and that interest will be paid by check addressed to the registered owner. On the other hand, it may be registered as to "principal only," so that ownership may be transferred only with the endorsement of the registered owner. The interest, however, is paid upon presentation of the appropriate coupon when due. Bonds are usually registered as to principal as a matter of protection and as to interest as a matter of convenience. A coupon bond, in contrast to a fully registered bond, is payable to the bearer and carries detachable interest coupons. Ownership may be transferred by simple delivery. Interest is collected by presentation of the appropriate coupon when due.

The Mengel Company  $3\frac{3}{4}$  per cent sinking fund debentures of 1959 were issued in coupon form in denominations of \$1,000 and \$500 and were registerable as to principal only. Principal is payable at the Guaranty Trust Company of New York, while interest is payable at the option of the holder at the Guaranty Trust Company of New York, at the Mercantile Commerce Bank & Trust Company of St. Louis, Missouri, or at the Kentucky Title Trust Company of Louisville, Kentucky. The Lorillard debenture 3's of 1963, on the other hand, were issued either as coupon bonds registerable as to principal or as fully registered (principal and interest) bonds. The coupon bonds were issued in denominations of \$1,000; the registered bonds were issued in denominations of \$1,000 and \$5,000.<sup>10</sup> Bondholders were given the privilege, however, of later exchanging one form for the other in like aggregate principal amounts upon payment of a stipulated charge.

**Guaranteed bonds.** Guaranteed bonds are those the principal and interest or only the interest of which is guaranteed by a company other than the issuer. They are found largely in the railroad field and arise from the fact that one railroad has leased another railroad. For example, the Pennsylvania Railroad Company operates only from Philadelphia to Pittsburgh, but the Pennsylva-

<sup>10</sup> The company was authorized to issue the registered bonds in higher denominations.

nia Railroad System includes important leased lines such as the United New Jersey (New York to Philadelphia); Philadelphia, Baltimore & Washington (Philadelphia to Washington); Pittsburgh, Fort Wayne & Chicago (Pittsburgh to Chicago); and the Pan Handle (Pittsburgh to St. Louis). Those roads are leased by the Pennsylvania Railroad Company, which guarantees the bonds of the leased lines.

The guarantee usually reads:

"The . . . Railroad Company . . . for value received, hereby unconditionally guarantees to the holder hereof . . . the due and punctual payment of the principal of and interest on the within bond . . . when due. . . ."

While many guarantees cover both principal and interest, the guarantee sometimes applies to interest only. For example, the Delaware & Hudson Railroad Company guaranteed the interest and principal of the Albany & Susquehanna Railroad first consolidated mortgage 3½'s of 1946, but only the interest (and sinking fund provisions) on the Rensselaer & Saratoga Railroad first mortgage 4's of 1961.

*Significance of guarantee.* The guarantee adds little to the bond besides the credit of the guarantor. In the event of the inability of the obligor to pay interest or principal when due, the holder must look to the guarantor for payment. This implies two additional considerations in determining the investment merits of the guaranteed bond: (a) the value of the property of the obligor to the guarantor and (b) the financial strength of the guarantor. The West Shore Railroad first 4's of 1936 are secured by a mortgage on 456 miles of road extending from Weehawken, New Jersey, to Buffalo, New York, and on extensive terminal facilities, ferries, and warehouse facilities. They are guaranteed by the New York Central Railroad, which leases the West Shore Railroad. The principal value of the West Shore Railroad to the New York Central is that it provides a line for through north and south freight, thus avoiding the congestion and lighterage at New York City. A contrasting situation occurred in the instance of the Atlantic & Danville Railway first mortgage 4's of 1948 and the second mortgage 4's of 1948. The railway was leased by the Southern Railway, and under the lease the interest, but not the principal, on the bonds was paid by the Southern Railway. The lease would have expired July 1, 1949, but the Southern Railway had the option of renewal by giving notice by July 1, 1944. In April, 1944, when railroad bond prices in general were advancing, the prices on the bonds moved down-

ward, which reflected a belief that the Southern Railway would not elect to renew its lease of the properties. This belief was confirmed when it was disclosed on June 29, 1944, that the Southern Railway would not exercise the option to renew. It was understood that the low traffic density on the railroad materially reduced the value of the road to the Southern Railway. The Atlantic & Danville was originally intended as an alternative route to Norfolk, Virginia, but it did not succeed in attracting a sufficient volume of traffic.

The investment position of a guaranteed bond depends primarily upon the value of the underlying property and secondarily upon the credit standing of the guaranteeing company.

*Railroad bridge bonds.* Two special types of guaranteed railroad bonds are bridge bonds and terminal bonds. The New York Connecting Railroad Company, which is owned jointly by the Pennsylvania and the New Haven railroads, has outstanding first mortgage, series B, 2 $\frac{7}{8}$ 's of 1975, which are a lien against the Hell Gate Bridge in New York City. The Pennsylvania and the New Haven, which both use the bridge, guarantee the bonds jointly and severally as to principal and interest. The strategic importance to the parent companies of the property underlying the bonds gives them a high rating.

*Terminal bonds.* Terminal bonds are issued by railroad associations formed by a group of railroad companies for the purpose of constructing terminal facilities in large cities, to be used by all of the participating companies. The companies involved usually assume proportionate responsibility for all the operating and financial expenses of the association either separately (severally) or collectively (jointly). For example, the Cincinnati Union Terminal Company has outstanding a first mortgage, series D, 3 $\frac{1}{2}$  per cent, dated May 1, 1936, and due May 1, 1971, and a series E, 3 $\frac{3}{8}$  per cent, dated February 1, 1939, and due February 1, 1969. The company is controlled jointly by the Baltimore & Ohio, the Chesapeake & Ohio, the Cincinnati, New Orleans & Texas Pacific, the Cleveland, Cincinnati, Chicago & St. Louis, the Louisville & Nashville, the Norfolk & Western, and the Pennsylvania Railroad. The bonds of the company are guaranteed as to principal and interest and sinking fund payments, jointly and severally by endorsement, by the above-named railroads.<sup>11</sup>

The Cleveland Union Terminal Company owns one of the largest

<sup>11</sup> The properties of the Cleveland, Cincinnati, Chicago & St. Louis Railway are held by the New York Central Railroad under a ninety-nine year lease effective February 1, 1930, under the terms of which, among other things, the New York Central assumes the obligation of the leased line in respect to its guarantee on those terminal bonds.

and most modern passenger terminals in the country, but it is not the only one in Cleveland, and it serves neither the Pennsylvania nor the Erie. The principal user of the property is the New York Central and its subsidiary, the Cleveland, Cincinnati, Chicago & St. Louis, which together account for approximately 93 per cent of the annual costs of operation and debt service. The New York, Chicago & St. Louis pays about 7 per cent of the expenses and interest. Bonds of Cleveland Union Terminal Company are guaranteed as to principal and interest by both the New York Central and the New York, Chicago & St. Louis, as well as by the Cleveland, Cincinnati, Chicago & St. Louis, leased line subsidiary of the New York Central. Each of the proprietary companies is obligated unconditionally to meet principal and interest. So long as they are solvent, operating costs, including interest, are apportioned among the owners on a use basis. Baltimore & Ohio, a non-proprietary tenant, also uses the terminal but to such a small extent that its contribution to operating costs is purely nominal.

Unlike many terminal bonds, however, the obligations of this terminal company have occupied a distinctly speculative position for two reasons: (a) in the last analysis, there are only two guarantors of the bonds and (b) neither railroad enjoyed a good credit standing for over a decade. This was reflected in the prices of the terminal bonds. The  $5\frac{1}{2}$ 's of 1972 sold at a low of 72 in 1940; the 5's of 1973 at  $60\frac{1}{2}$  in 1941; and the  $4\frac{1}{2}$ 's of 1977 at  $54\frac{3}{4}$  in 1941. The prices of those bonds were influenced by the fear that if the New York Central were to become involved financially, it might refuse to pay its share of the interest. It was generally felt that if the New York Central defaulted, the New York, Chicago & St. Louis would be in no position to service the full debt and, in turn, would be forced into reorganization. Basically the strength of the bonds depended upon the financial strength of the New York Central alone rather than the joint strength of the New York Central and the New York, Chicago & St. Louis. The subsequent rise in the average prices of the bonds, however, reflected the improvement in the financial strength of the New York Central.

Companies in default on their mortgage bonds frequently continue to make their proportionate payments on terminal contracts in order to retain the use of an essential facility. The strength of a terminal bond, therefore, depends primarily upon the value of the terminal property to and the financial strength of the guarantor companies.

**Maturity.** While all bonds of the same issue generally have the same maturity date, some issues have serial maturities, some are arranged in series, and others are perpetual.

*Serial bonds.* Serial bonds are bonds on which the maturities are spread over a succession of years rather than in a single year. For example, Pennsylvania Railroad equipment "K"  $2\frac{1}{4}$ 's were issued in 1940 with an authorized amount of \$7,995,000. Under the indenture, however, \$533,000 mature each July 1 from 1941 to 1955, inclusive. In a serial issue, all the bonds have a common date of issuance but varying maturity dates. The coupon rate may or may not vary.

*Series bonds.* Series bonds, on the other hand, are issued in sequential series under the same mortgage. Although all the bonds thus issued have the same security, each series has distinctive features of its own, such as date of issuance, interest rate, maturity date, and call price, if callable. For example, Commonwealth Edison Company of Chicago has a first mortgage bond indenture under which are outstanding series I and series J.<sup>12</sup> Series I was dated June 1, 1938, carries a coupon rate of  $3\frac{1}{2}$  per cent, and matures June 1, 1968, whereas series J was dated April 1, 1939, has a coupon rate of  $3\frac{1}{4}$  per cent, and matures April 1, 1979. This type of financing gives the corporation a maximum degree of flexibility and allows each new issue to meet the prevailing market conditions.

*Perpetual bonds.* A perpetual bond is an interest-bearing obligation which has no date of maturity. Such bonds may be issued by governmental bodies or by private corporations. Outstanding among the governmental issues are the British Government "Consols," and among the private corporate issues are the Lehigh Valley Railroad consolidated mortgage currency 6's and  $4\frac{1}{2}$ 's issued in 1873 and the Public Service Corporation of New Jersey perpetual-interest-bearing 6 per cent certificates issued in 1903.

In other instances, while the bond has a definite maturity date, it is so far in the future that for practical purposes the bond is a perpetual obligation, as, for example, West Shore Railroad 4's of 2361 and Elmira & Williamsport 5's of 2862. In a perpetual obligation the bondholder is simply buying the right to income for the period during which he holds the bond.

**Stock options.** In some bond indentures, the bondholder may have the opportunity to obtain stock either through the exercise of a conversion privilege or by means of a stock purchase warrant.

<sup>12</sup> The previous series A to H have been retired.



**Convertible bonds.** The conversion feature in a bond gives the bondholder the option of converting the bond into stock under the conditions stated in the indenture. The conversion clause involves three factors: (a) the security into which the bond may be converted, (b) the period during which the conversion privilege may be exercised, and (c) the ratio at which the bond may be converted. A convertible bond is usually convertible into the common stock of the company. It may be convertible during a limited period or during the entire life of the bond. The conversion privilege under the American International convertible 5½'s issued in 1929 expired in 1934, whereas the conversion privilege under the New Haven convertible 6's issued in 1907 did not become effective until 1923.

The bond may be convertible on the basis of par for par or at a fixed ratio. Convertible at par means that \$1,000 principal amount of bond is convertible into \$1,000 par value of stock. The number of shares of stock received in exchange depends upon the par value of the stock. The bondholder would receive ten shares if the stock has a par value of \$100, twenty shares if the par value is \$50, and forty shares if the par value is \$25. On the other hand, the bond may be convertible at a fixed ratio. Phelps Dodge 3½'s of 1952 were convertible at the rate of one share of \$25 par value stock for each \$50 of principal amount of the bond. A \$1,000 principal amount of bond, therefore, would have entitled the bondholder to twenty shares of stock (\$1,000/\$50 per share).

*Market value.* The market value of a convertible bond is affected by two features: (a) its actual value as a fixed-income obligation and (b) its potential value as the stock into which it may be converted. The market value of the bond tends to change with changes in the market value of the stock. In a rising stock market, the bond advances proportionately to the rise in the value of the stock after the conversion parity has been passed, because the potential value as stock becomes more valuable. Commonwealth Edison debenture 3½'s of 1958, convertible at \$25 a share, were worth 120 when the stock was selling at \$30 a share. At a conversion price of \$25, a bond was convertible into forty shares of stock, and with the stock selling at \$30 a share, the bond was worth \$1,200. In a declining stock market the potential value decreases until it disappears, after which the bond sells solely on the basis of a fixed-income obligation.

The extent to which the market price of the stock and the conversion price of the bond affect the market price of the bond was illustrated in the instance of Great Northern Railway general

mortgage 4's, series G, and general mortgage 4's, series H. When the stock was selling around \$38 a share, the former bond continued to sell at a premium of several points above the latter bond notwithstanding the fact that both issues were scheduled for early redemption at 101. The higher price for the series G was due to the fact that it was convertible into common stock at \$40 a share, whereas the conversion price for the series H was \$75 a share.

*Significance of convertible bonds.* One of the most serious problems confronting the bondholder is the ever-changing purchasing power of the dollar. No matter how well secured the bond may be, if it matures during a period of high commodity prices, the investor who bought it during a period of low commodity prices will have sustained a definite loss in purchasing power, even though the principal amount of \$1,000 is paid in full. In theory the convertible bond was designed to overcome this problem. In addition to the promise to pay \$1,000 with interest, the issuer gives the bondholder an opportunity to share in the future profits of the company. The implication in a convertible bond is that the investor has an opportunity to make profits while at the same time he is insured against loss by virtue of the fixed obligation to pay the principal amount.

There are three principal reasons, however, why convertible bonds, as a class, have not lived up to their reputation as a cure-all for bondholders' troubles. First, an examination of the record of convertible issues reveals that many of the corporations resorting to financing by convertible bonds could not, at the time of issue, borrow on their straight credit. To induce bondholders to invest their funds, it was necessary to "sweeten" the issue by making it convertible. Second, in some instances the market price of the stock has not made conversion profitable. For example, National Distillers Products Corporation 3½'s of 1949 were convertible into stock at \$35 a share at any time for the first \$7,500,000 of debentures surrendered, at \$40 a share for the next \$7,500,000, and at \$45 for the last \$7,500,000. In 1943, when \$5,000,000 of the bonds were called for redemption on August 10, the stock was selling at 32¾ on the date the call was issued. The price of the stock never went high enough to make conversion profitable to the holders of the called bonds. Again in 1944 the company called the remaining bonds for redemption on October 20 at 102. The stock closed at 33⅔ on the day before the call. It would have been necessary for the stock to

have risen about two and one-half points before conversion would have begun to be more advantageous than taking the redemption price. Third, some of the few issues which actually did benefit from a substantial rise in the value of the stock were called for redemption prior to maturity.

**Bonds with warrants.** Bonds with warrants are those that bear stock purchase option warrants, which give the holder the privilege of buying a certain number of shares of the stock at a fixed price during a specified period. The warrants attached to the National Dairy Products Corporation debenture  $3\frac{3}{4}$ 's of 1951 gave the bearer the right, up to May 1, 1940, to purchase ten shares of common stock at \$28 a share. The warrants attached to Remington Rand debenture  $4\frac{1}{4}$ 's of 1956 gave the holder the right up to March 1, 1944, to purchase fifteen shares of common stock at prices gradually increasing up to a maximum of \$38.69 a share.<sup>13</sup>

*Kinds of warrants.* The warrants may or may not be detachable. The Remington Rand debenture  $4\frac{1}{4}$ 's of 1956 warrants were detachable. This meant that the bondholder could sell the warrants and retain the bond; the purchaser of the warrants could exercise the stock purchase option afforded by the warrants. The National Dairy Products Corporation debenture  $3\frac{3}{4}$ 's of 1951 warrants were not detachable. This meant that the stock purchase option afforded by the warrant could be exercised only by the owner of the bond. The warrant could be exercised by a buyer only by the purchase of the warrant and the bond.

*Market value.* The value of the warrant influences the value of the bond. Obviously as the price of the stock rises, the warrant becomes more valuable, and this in turn enhances the value of the bond. For example, the Commercial Mackay Corporation income debentures had warrants which gave the holder the privilege of either exchanging the debentures for American Cable & Radio common in the ratio of 115 shares of stock for each \$1,000 of debentures or detaching the warrants and exercising the right to purchase 115 shares of the stock per \$1,000 of debentures at approximately \$8.70 a share. In June, 1944, the debentures were quoted at 130 and American Cable & Radio common at 10. Inasmuch as the debentures were callable at any time on 30 days' notice at par and accrued interest, the 30-point premium on the bonds was due largely to the warrant privileges. On an outright conversion of the debentures, the holder would receive stock valued at approximately \$1,150

<sup>13</sup> Each of these issues was called for redemption in 1941.

for each \$1,000 principal (115 shares at market value of \$10 a share), while the exercise of the stock-purchase privilege would permit the holder to buy stock having an aggregate value of \$1,150 (115 shares at \$10 a share) on an investment of \$1,000.50 (115 shares at \$8.70 a share).

Corporations issuing bonds with warrants or with a conversion feature face a common problem, namely, the necessity of "sweetening" the bond in order to sell it. Bonds with warrants and convertible bonds have a common purpose, namely, to give the bondholder an opportunity to realize income in excess of the contract rate of interest. The two types of bonds differ, however, in the method of attaining this purpose. The holder of the convertible bond who takes advantage of the option to exchange the bond for stock must relinquish the bond, and hence changes his status from a creditor to an owner. On the other hand, the holder of the bond with warrants who takes advantage of the option retains his bond and in addition becomes a stockholder.

**Bond retirement.** While the issuer obligates itself to repay the principal of the bond at maturity, it may anticipate payment by the creation of a sinking fund or by reserving the privilege of retiring the bond issue prior to maturity.

**Sinking fund.** Bond indentures that provide for a sinking fund require the issuer to build up a fund during the life of the bond in order to sink, or liquidate, the debt. Usually the sinking fund is calculated to retire a substantial portion of the debt by maturity. For example, the sinking fund provided under the American Tobacco 3's of 1962 is estimated to retire at least 75 per cent of the \$100,000,000 issue by maturity.<sup>14</sup>

*Sinking fund payment.* The annual sinking fund requirement may oblige the issuer to pay a definite sum, an amount varying with earnings, or an amount proportionate to physical output, or a combination of the three. The sinking fund provision of the Phelps Dodge Corporation debenture 3½'s of 1952 obligates the company to pay to the sinking fund agent on or before October 20, 1942-1951, inclusive, a sum of \$800,000. Any payment due is reduced, however, by the percentage that the original principal amount of debentures has been reduced by conversion or call for redemption at the option of the company.<sup>15</sup> In addition, the company is required to pay into

<sup>14</sup> The operation of the sinking fund makes the average life of the twenty-year issue less than fourteen years.

<sup>15</sup> The company may deliver bonds at their purchase price (but not in excess of the prevailing redemption price) instead of cash.

the sinking fund, on or before each April 20, 1939-1951, inclusive, a sum equal to 20 per cent of consolidated net income for the previous calendar year. This payment need not exceed \$1,200,000 in any year and may be reduced by the percentage that the original principal amount has been reduced by conversion or by redemption at the option of the company. The sinking fund provision in the indenture of Walworth Company first mortgage 4's of 1952 requires the retirement through annual sinking-fund operations of a face amount of the bonds equal to 20 per cent of the preceding year's net earnings. The annual payment based upon physical output is usually found in bonds issued by companies in the extractive industries. For instance, Kirby Lumber Corporation first mortgage 4's of 1947 provide for the payment of \$4 per 1,000 feet, board measure, for timber cut and manufactured or cut without being manufactured by the company.

From the investor's standpoint the first method is preferable, namely, the payment into the sinking fund of a definite annual sum.

*Use of the sinking fund.* The sinking fund may be used (a) to redeem outstanding bonds of the same issue either by purchase in the open market or by call, (b) for investment in other securities, or (c) for plant improvements. The expression "subject to call for sinking fund only" means that the bonds, otherwise not callable for redemption, may be drawn by lot and redeemed out of the sinking fund. For example, Connecticut Light & Power Company first and refunding A 7's of 1951 are redeemable for sinking fund only on any interest date prior to and including November 1, 1931, at 110 and interest, thereafter decreasing one-half of 1 per cent annually to 100½ and interest on November 1, 1950. Bonds so acquired under the sinking fund provision must be kept alive and interest added to the sinking fund. In May, 1944, Shell Union Oil Corporation notified holders of its fifteen-year 2½ per cent debentures, due July 1, 1954, that \$1,476,000 principal amount of those debentures had been drawn by lot for redemption on July 1, 1944, at their principal amount and accrued interest for account of the sinking fund. Holders of the debentures drawn were advised to surrender them for redemption at the Guaranty Trust Company, New York, on or before July 1, 1944, after which date interest would cease to accrue on the debentures or portions thereof called for redemption.<sup>16</sup>

<sup>16</sup> On May 15, 1944, there were \$59,000 principal amount of debentures that had been previously drawn for redemption but that had not been presented for payment by the holders.

*Significance of the sinking fund.* A sinking fund provision requiring the redemption of the bonds provides the bondholder with two important advantages. One, the bond enjoys increasing security as the amount of indebtedness is reduced. Two, in order to meet the terms of the sinking fund requirement, the issuer sometimes must purchase its bonds in the market, thus tending to maintain the market value of the bonds at a level above that at which they might otherwise sell.

**Callable bonds.** Some bond indentures contain a clause giving the issuer the option of calling the bonds for retirement prior to the date of maturity. The call clause has five features: (a) the period during which the option may be exercised; (b) the date on which the bonds may be called for redemption; (c) the notice of intention to redeem, which must be given to the bondholders; (d) the amount of bonds that may be called for redemption; and (e) the price at which the bonds must be redeemed.

The period during which the issuer may exercise the privilege of calling the bond for redemption prior to maturity is stated in the indenture. Bonds are usually but not always callable during their entire life. In some indentures the bonds are callable on any interest payment date. If the issuer fails to call the bonds on a specific interest payment date, it cannot exercise the privilege before the next interest payment date however favorable market conditions may be in the interim. For this reason many bonds issued in recent years have reserved to the issuer the right to call the bonds at any time. For instance, Jones & Laughlin Steel Corporation first mortgage 3 $\frac{1}{4}$ 's, series C, of 1961 are callable at any time. The call clause in an indenture also specifies the notice of intention to redeem which must be given to bondholders. In the Jones & Laughlin bonds the corporation must give the bondholders at least thirty days' notice. In addition, the indenture usually states the amount of bonds that may be called for redemption. The usual provision is "as a whole or in part." The Jones & Laughlin bonds are callable as a whole or in part in aggregate amounts of not less than \$1,000,000. The price at which the bonds must be redeemed either is fixed for the entire period or is based on a sliding scale which provides for a relatively higher premium in the event of early redemption and for a smaller premium for later redemption. For example, the Jones & Laughlin bonds referred to above are callable at the following prices to each January 1, inclusive:

1947	. . . . .	103
1949	. . . . .	102½
1951	. . . . .	102
1953	. . . . .	101½
1956	. . . . .	101
1959	. . . . .	100½
1961	. . . . .	100

*Market value.* The price at which a callable bond may be redeemed tends to set a ceiling on the market price. For example, Republic Steel Corporation 4½'s of 1956, which were callable at 104, never sold higher than 106½. Inasmuch as callable bonds are callable at the option of the issuer, they are more likely to be called when market conditions are favorable to the issuer and correspondingly unfavorable to the investor. In the period beginning 1935 many corporations took advantage of prevailing low interest rates by calling their bonds for redemption and replacing them with bonds bearing a lower coupon rate. For example, Shell Union Oil Corporation debenture 5's of 1947 were called for redemption at 102 in 1936 and retired out of the proceeds of the sale of a 3½ per cent issue due in 1951. In view of prevailing market conditions, the holders were obliged to accept a reduced rate of return. It is significant that the holder of a callable bond may be forced to accept less income in the event of a decline in interest rates but is not afforded an opportunity to obtain more income should interest rates rise.<sup>17</sup>

Some bonds are both convertible and callable. If, in such instances, the bond commands a substantial premium in the market as a result of the value attaching to the conversion privilege, redemption may have the effect of forcing the bondholder to convert the bond into stock. For example, Allis Chalmers Manufacturing Company issued \$15,000,000 of convertible debenture 4's at par in 1935, which were due in 1945. The debentures were convertible into common stock at \$35 a share (28.57 shares per \$1,000 bond) until June 30, 1937, and thereafter at higher prices unless called for redemption. In March, 1936, the stock sold at \$45 a share, which made the bonds worth 128½ (more exactly \$1,285.65); later the stock advanced to 81 and the bonds sold as high as 219. The bonds were called for redemption at 103, which had the effect of forcing conversion into the stock, which at the time was selling for more than double the conversion price. As no investor would present a \$1,000 bond for payment at \$1,030 when he could con-

<sup>17</sup> It should be noted also that a non-callable feature in a bond is emphasized when such a bond is offered to investors.

vert the bond into stock enjoying an aggregate market value of more than \$2,000, the call for redemption hastened the conversion of the bonds.

**Income bonds.** Income or adjustment bonds are bonds on which the interest is paid only when earned and declared. The payment of interest is not a mandatory charge; it is contingent upon the amount of earnings. The Green Bay & Western Railroad Class A income debentures and the Missouri-Kansas-Texas Railroad cumulative adjustment mortgage 5's, series A, of 1967 are two typical income bonds. The principal of the Green Bay & Western income bonds is due only when the road is sold or reorganized. In the meantime, interest is payable only if earned and at such a rate as shall be determined up to a maximum of 5 per cent. Interest was paid at the full rate annually 1904-1932; at  $2\frac{1}{2}$  per cent in 1933; at 3 per cent in 1934; at  $2\frac{1}{2}$  per cent in 1935; at  $7\frac{1}{2}$  per cent in 1936 and 1937; none in 1938; and at 5 per cent in 1939 to 1944, inclusive. Interest on the Missouri-Kansas-Texas income bonds is paid at the discretion of the board of directors. In this instance, however, the interest charge has been cumulative since January 1, 1925, but the accumulation of interest does not itself bear interest. The interest was paid in full or in part up to April 1, 1937. Interest payments were then discontinued until April 1, 1945, when the management authorized the payment of a full year's interest. The accumulation remaining after the payment amounted to 45 per cent per bond, an aggregate of \$6,110,000.

Income bonds are generally issued as part of a reorganization plan under which bond interest charges are "scaled down" to an amount estimated to be within the reasonable capacity of the enterprise. They enable the issuer to reduce the fixed-charge burden by converting a fixed charge into a contingent charge.

Income bonds may be secured by a mortgage or they may be totally unsecured. Boston & Maine income  $4\frac{1}{2}$ 's of 1970 are secured by a second lien on the entire owned mileage of the road, whereas the Green Bay & Western Class A income bonds are unsecured. While the payment of interest is contingent upon earnings, income bonds usually contain a definite promise to pay the principal at a fixed maturity date. Income bonds as a class lack the qualities of safety and stability of income.<sup>18</sup>

<sup>18</sup> An outstanding exception has been the Atchison, Topeka & Santa Fe Railway adjustment mortgage 4's of 1995 issued under the reorganization of the railroad in 1895.



## Review Questions

1. Define a bond.
2. Indicate the position of the bondholder.
3. Discuss the methods of determining the nature and the value of the bondholder's claim.
4. Distinguish between a secured and an unsecured bond.
5. Describe the nature of the security underlying a mortgage bond.
6. Distinguish between the corporation as a borrower and mortgagor and the bondholders as lenders and mortgagees.
7. Describe the contents and significance of the deed of trust.
8. Explain the meaning of an "after-acquired" clause.
9. Distinguish between a senior and a junior lien.
10. What are the distinguishing features of closed-end, open-end, and limited open-end mortgages?
11. Discuss the basis of investment quality of a mortgage bond.
12. Describe the nature of a collateral trust note.
13. Discuss the investment record of collateral trust notes.
14. Describe the nature of an equipment trust obligation.
15. Distinguish between the lease and conditional sale plans of issuing equipment trust obligations.
16. Discuss the investment quality of equipment trust obligations.
17. Define a debenture bond.
18. Discuss the position of a debenture bondholder in the event of default.
19. Indicate the usual issuers of debenture bonds.
20. Explain the "covenant of equal coverage" in a debenture bond indenture.
21. Discuss the investment position of debenture bonds as compared to secured bonds.
22. Indicate the features of a bond indenture that are important to the bondholder
23. Distinguish between a temporary bond and a definitive bond.
24. Distinguish between a registered bond and a coupon bond.
25. What is the nature of the guarantee in a guaranteed bond?
26. Account for the existence of guaranteed bonds.
27. Discuss the investment significance of a guaranteed bond.
28. Name and distinguish between two special types of guaranteed railroad bonds.
29. Tell what distinguishes a serial, a series, and a perpetual bond.
30. What is meant by a convertible bond?
31. Discuss the features affecting the market value of a convertible bond.
32. Explain the relation of a convertible bond to the changing purchasing power of the dollar.
33. What is meant by a bond "with warrants"?
34. Distinguish between a detachable and a non-detachable warrant.
35. Indicate the relation of the value of the warrant to the value of the bond.
36. Discuss the significance of the warrant and the conversion privilege to the bondholder.

37. What is meant by a "sinking fund" bond?
38. Describe the methods of calculating the annual sinking fund payment.
39. Discuss the significance of those methods to the investor.
40. Indicate the uses made of the sinking fund.
41. What is meant by the expression "subject to call for sinking fund only"?
42. Discuss the significance of the sinking fund provision to the bondholder.
43. What is meant by a callable bond?
44. Name the features of the redemption clause.
45. Discuss the relation of the redemption price to the market price of the bond.
46. Describe the conditions under which the calling of a convertible bond for redemption may force the bondholder to convert.
47. What is meant by an income bond?
48. Under what conditions are income bonds usually issued?
49. Distinguish between the agreement to pay interest and the agreement to pay principal in an income bond.
50. Discuss the investment significance of an income bond.

#### Assignment

- (a) Determine the following investment features of the Chicago, Indiana & Southern Railroad first 4's of 1956: authorized, outstanding, interest dates, denominations, callable, sinking fund, guaranteed, lien, legal investment, and listed.
- (b) Indicate the number of shares of stock which the holder of a convertible bond may receive upon conversion if the conversion value of the stock is (1) 110, (2) 115, (3) 125.
- (c) A company, which was paying a regular annual dividend of \$9 a share on its capital stock, issued \$234,000,000 of 3 per cent debentures convertible into the stock at \$140, payable by the surrender of \$100 principal amount of debentures and \$40 in cash. Account for the conversion of \$137,000,000 of the bonds during the succeeding four years.
- (d) The warrant attached to a bond gives the bondholder the right to buy one share of the common stock at \$40 a share. Determine the value of the warrant with the common stock selling on the market at (1)  $42\frac{1}{2}$  a share, (2) 45 a share, and (3) 35 a share.
- (e) Compute the value of the premium and the value of the privilege of a warrant that gives the holder the right to buy one share of the stock at \$17.50 a share, when the stock is selling on the market at \$20 and the warrant is selling at \$7.50.

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## CHAPTER THREE

# STOCKS

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**Introduction.** The ownership of a corporation is divided into units called shares. A stockholder's interest is evidenced by a stock certificate, which states, among other things, the name of the stockholder, the class of stock, and the number of shares owned. This information also appears on the stock record of the corporation.

**Par value.** Corporate stock may be either par value or no par value stock. The par value of a share of stock is a purely arbitrary, nominal value given to the stock by the certificate of incorporation. The par values of stocks are not uniform, as evidenced by the following common stocks: American Telephone and Telegraph (\$100), Pennsylvania Railroad (\$50), du Pont (\$20), Borden (\$15), and General Motors (\$10). The par value of a stock is of little significance to the investor, however, since it bears no relationship to the market value. For example, during a recent period the common stock of the Pennsylvania Railroad, with a par value of \$50, sold at a high of 87 and a low of 6, and General Motors common stock, with a par value of \$10, sold at a high of 77 and a low of 8. The market price of a stock is influenced primarily by earnings.

No par value stock, as the name implies, is stock without par value. The common stocks of such companies as General Electric, National Dairy Products, and Montgomery Ward are without par value.

**Stockholder's position.** The stockholder is an owner, in contrast to the bondholder, who is a creditor. The annual interest payment to the bondholders constitutes a prior charge against the earnings and must be paid before the corporation may make any dividend distribution to the stockholders. In the event of liquidation, the claim of the bondholders takes precedence over the interest of the stockholders. As an owner, therefore, the stockholder has a residual interest in the earnings and in the assets. The nature of the stock-

holder's interest, however, depends upon whether he is a preferred stockholder or a common stockholder.

**Preferred stock.** Preferred stock has certain preferences as against the common stock in the interest in the earnings, in the assets, and in the management. The exact nature of those preferences in the instance of a specific preferred stock, however, can be determined only by reference to the preferred stock provisions in the certificate of incorporation. It is essential, therefore, that the investor who is interested in a preferred stock determine the kind and extent of the preferences and the effect of those preferences upon the investment quality of the stock.

The preferred stockholder's interest in the earnings may be stated as (a) preferred as to dividends, (b) cumulative, (c) participating, and (d) convertible.

**Dividends.** Preferred stock is invariably preferred as to dividends, which means that the right of the preferred stock to dividends takes precedence over the right of the common stock. The rate of annual dividend to which the preferred stock is entitled is stated on the stock certificate. The annual dividend rate on a par value stock is stated as a percentage of par value. The annual dividend rate on the preferred stock of Westinghouse Electric Corporation is 7 per cent, whereas the rate on the preferred stock of Corning Glass Works is  $3\frac{1}{2}$  per cent. The dividend rate represents the rate payable on the par value of the stock. The annual dividend in terms of dollars, therefore, depends upon (a) the dividend rate and (b) the par value. Westinghouse preferred stock dividend is at the rate of 7 per cent on a par value of \$12.50, or \$0.875, while the dividend on the Corning Glass preferred is at the rate of  $3\frac{1}{2}$  per cent on a par value of \$100, or \$3.50. The annual dividend rate on a stock without par value, on the other hand, is stated directly in terms of dollars. For example, General Motors Corporation preferred stock, which has no par value, is entitled to an annual dividend of \$5.

The annual dividend rate is commonly referred to as the preferred dividend "requirement." It indicates the dividend to which the stockholder is entitled; at the same time it sets the limit to which the stockholder may share in the earnings. The dividend rate on the preferred stock is comparable to the interest rate on the bond in that each rate is definite. On the other hand, the payment of the dividend on the preferred stock is unlike the interest on the bonds in that the latter is a fixed charge whereas the former is a contingent charge — contingent upon earnings and the discretion of

the board of directors. Interest on the bonds must be paid to avoid default, but the dividend on the preferred stock may or may not be paid, and failure to pay the dividend does not constitute default.

The fact that a preferred stock is preferred as to dividends does not assure the stockholder that the regular dividend will be paid annually. The company may pay the full dividend or part of the dividend or may omit the payment of the dividend, as the board of directors may elect. The annual dividend requirement on the preferred stock of United States Steel Corporation is \$7; nevertheless the company paid only \$5.75 dividend on the stock in 1932. Preference as to dividend simply assures the preferred stockholder that no dividend will be paid on the common stock in any one year unless the full preferred stock dividend has been paid.

**Cumulative.** Ordinarily, if the dividend on the preferred stock is not paid in the current year, the stockholder has no claim on future earnings for the omitted dividend. The stockholder's hope is that earnings for the succeeding year will be adequate to warrant the payment of the annual dividend. In some instances, however, the preferred stock is given a cumulative feature and is referred to as cumulative preferred stock. Under this provision, omitted dividends accumulate and are referred to as "dividends in arrears." A study by the New York Stock Exchange revealed that as of January 1, 1945, there were \$983,996,000 of dividends in arrears on sixty-two stock issues. In more than half of the issues the arrearage covered a period of nine or more years. Among the preferred stocks having a sizable amount of dividends in arrears were:

<i>Issue</i>	<i>Arrearage</i>
Guantanamo Sugar 8% pfd . . . . .	\$118 00
Missouri-Kansas-Texas RR 7% pfd "A" . . . . .	94.50
New York, Chicago & St. Louis RR 6% pfd "A" . . . . .	81.00
Laclede Gas Light of St. Louis 5% pfd . . . . .	55 00
White Sewing Machine conv. pfd . . . . .	51.00
Armour (Ill.) \$6 conv. prior pfd . . . . .	28.50
Commonwealth & Southern \$6 pfd . . . . .	28.50

In instances where the accumulation of dividends in arrears on preferred stocks is eliminated, it is accomplished either by payment in cash or by recapitalization. The United States Steel Corporation, for example, paid the regular dividend of \$7 on its cumulative preferred stock in 1931 in spite of the fact that the earnings per share amounted to only \$3.62. In 1932, however, with a deficit of \$19.70 a share, the management paid a dividend of only \$5.75, which meant that there was a dividend arrearage of \$1.25. An annual

dividend of \$2 was paid in 1933–1935 which resulted in an aggregate arrearage of \$16.25 at the close of 1935. The management paid a dividend of \$14 in 1936, of which \$7 represented the regular annual dividend requirement and \$7 applied to a reduction in the arrearage, reducing the latter to \$9.25. During 1937 the management paid the regular quarterly dividend requirement of \$1.75 and by August 30 had paid off the entire arrearage of \$9.25 accumulated at the close of 1936.

On the other hand, the accumulated dividends on the 7 per cent preferred stock (par \$100) of Bethlehem Steel Corporation, which amounted to \$21 a share on April 1, 1936, was cleared up by a recapitalization. Under a merger agreement effective February 26, 1936, every 7 per cent preferred share of the New Jersey corporation was exchanged for one \$100 par value 7 per cent preferred share and one \$20 par value 5 per cent cumulative preferred share of the successor Delaware corporation and \$1 in cash. The \$21 arrearage was paid partly in cash (\$1) and partly in new preferred stock (\$20 par value). Subsequently the \$20 par value 5 per cent preferred stock (Delaware corporation) was redeemed on April 1, 1940, at \$20 a share and accrued dividend of 25 cents.

The payment of cumulative dividends on a preferred stock is contingent upon earnings and the discretion of the management. The fact that a preferred stock is cumulative is no assurance that the dividends — current and accumulated — will be paid at any time. The only assurance given the preferred stockholder is that no dividend will be paid on the common stock until the arrearage and the current regular dividend on the preferred stock have been paid in full. In the instance of the United States Steel Corporation, it was not until 1937, when the arrearage on the preferred stock had been eliminated, that the common stock was eligible for a dividend, and then only after the payment of the current regular dividend on the preferred stock.<sup>1</sup>

**Participating.** Ordinarily the annual dividend on a preferred stock is definite and limited. For example, the annual dividend on United States Steel Corporation preferred is definitely fixed at 7 per cent

<sup>1</sup> In some instances the cumulative feature has proved a profitable speculation. For example, in June, 1944, a trader sold at 92½, 100 shares of Associated Dry Goods \$7 second preferred stock, which he had purchased in 1939 at 52, thus obtaining a gross profit on the sale of approximately \$4,075. In addition he had received \$7,175 in dividends, representing the regular \$7 annual dividend in 1940–1943, \$40.25 a share payment of dividends in arrears, and regular quarterly dividends in 1944 aggregating \$3.50 received up to the time of sale. He thus received profits and dividends aggregating \$11,250 on an original investment of \$5,200.

of the par value of \$100, or \$7, and is limited to that rate. In other instances, however, the preferred stock is permitted to share in the earnings in excess of the stated rate of dividend. Such a stock is entitled to its regular dividend and then, after the common receives a similar rate of dividend, participates with the common stock in the balance of the earnings distributed as dividends. For example, Westinghouse Electric Corporation had outstanding a 7 per cent participating preferred stock on which the management distributed \$16,007,230 as a dividend in 1937. The preferred stock was entitled to its regular dividend of 7 per cent on the then current par value of \$50, or \$3.50 per share, aggregating \$279,909 on 79,974 shares of preferred stock. The common stock was entitled to a similar rate of dividend, namely, 7 per cent. Inasmuch as the par value of the common stock was \$50 at the time, the common stock was entitled to \$3.50 per share, aggregating \$9,072,543 on 2,592,155 shares of common stock. The aggregate dividends distributed to the two classes of stock at this point was \$9,352,452, leaving an undistributed balance of \$6,654,778. This was divided on a pro rata basis among the two classes of stock. The preferred stock, aggregating 79,974 shares or 3 per cent of the total stock outstanding (2,672,129 shares), received 3 per cent of the undistributed balance of \$6,654,778, or \$199,935 additional dividend, as a participating dividend. The common stock, aggregating 2,592,155 shares or 97 per cent of the total stock outstanding (2,672,129 shares), received 97 per cent of the undistributed balance of \$6,654,778, or \$6,454,843. The preferred stock, therefore, received an aggregate dividend of \$479,844, of which \$279,909 represented the regular dividend and \$199,935 the participating dividend.<sup>2</sup>

The extent of the participation by the preferred stock may be limited, however, by the provisions of the certificate of incorporation. For example, the 6 per cent cumulative preferred stock (par value \$25) of the Diamond Match Company is entitled to a regular annual dividend of \$1.50 a share. In addition, after the common stock receives a dividend of \$1.50, the preferred stock is entitled to participate, share for share with the common stock, in any additional distribution. The preferred stock, however, is not entitled to receive dividends in excess of \$2, including the regular dividend of \$1.50. In other words, the maximum participating dividend

<sup>2</sup> The participation of a preferred stock may be simple (as in the instance of Westinghouse), immediate, or special. A preferred stock that participates immediately is entitled to its regular dividend and then immediately participates with the common stock in the balance of the earnings distributed as dividends.

which the preferred may receive is 50 cents. The Diamond Match preferred received a participating dividend in 1935 (20 cents), in 1936 (25 cents), in 1937 (50 cents), and in 1938 (50 cents).

Participating preferred stockholders are not assured that dividends, either regular or participating, will be paid at all. The payment of dividends — regular and participating — depends largely upon earnings. Investors in participating preferred stock are assured only that they will receive dividends before the common stockholders and that they will be permitted to share in any excess earnings distributed as dividends.

**Convertible.** Preferred stock may have the privilege of conversion into common stock. This conversion provision, like that of a convertible bond, states the security into which the preferred stock may be converted (usually common stock), the period during which the conversion privilege is valid, and the ratio at which the preferred stock is convertible. The \$5 preferred stock of Goodyear Tire & Rubber Company, for example, was convertible into common stock of the company at \$75 a share until October 1, 1946, when the privilege expired. A share of 5 per cent preferred stock of Melville Shoe Corporation is convertible into common stock at the rate of  $2\frac{1}{2}$  shares of common stock from January 1, 1945, until the conversion privilege expires on January 1, 1950. It is significant that for preferred stocks that are convertible at varying prices during the period of the privilege in accordance with the prescribed schedule, the conversion price usually increases with the later dates. To the extent that conversion is postponed, the lower is the cost in common stock to the corporation and, by the same token, the smaller is the return in common stock to the investor when the privilege is exercised.

The conversion privilege may favorably affect the value of the preferred stock. The value of a convertible preferred stock is influenced by two factors: (a) its value as a preferred stock and (b) its potential value as common stock. As the preferred stock is convertible at the option of the preferred stockholder, naturally the holder will convert only when market conditions make such action profitable. Conversion is attractive when earnings enable the company to pay a higher dividend on the common stock than on the preferred stock. The preferred stockholder has an opportunity to exchange a preferred stock with a limited dividend for a common stock with a higher current dividend. Before converting, however, the preferred stockholder must consider the market prices of the



respective shares and the fact that conversion changes his status from a preferred to a common stockholder.

**Assets.** Preferred stock usually has a preference over the common stock in the distribution of the assets of the corporation in the event of dissolution. The extent of the preference is stated in the certificate of incorporation. The 6 per cent preferred stock of Eastman Kodak Company is entitled to par value of \$100 a share in dissolution, whereas the \$5 preferred stock of General Motors Corporation, which is without par value, is also entitled to \$100. On the other hand, the 7 per cent preferred stock of American Radiator & Standard Sanitary Corporation, which has a par value of \$100, is entitled to \$175. In some instances the extent of the preference of the preferred stock against the assets depends upon the nature of the liquidation. For example, the first preferred stock of Maytag Company is entitled to \$100 a share in involuntary liquidation and to \$110 a share in voluntary liquidation. In all instances the preferred stock is also entitled to accrued dividends.

The preference as to assets has little practical value to the investor. In the first place, his primary interest is in the corporation as a going concern, not as a liquidating concern. In the second place, liquidation of a company is usually the result of failure, in which case the assets are generally in the possession of the creditors, leaving little or nothing available for the stockholders.

**Voting and vetoing.** The interest of the preferred stock in the management may be stated in a positive manner (voting power) or in a negative manner (vetoing power). In some instances not only does the preferred stock have voting power; a share of preferred stock may even have more votes than a share of common stock. For example, every share of the preferred stock of International Harvester Company has four votes whereas each share of the common stock has one vote. The preferred stock, with 816,724 shares outstanding, has an aggregate of 3,266,896 votes, or 44 per cent of the total votes. The common, with 4,245,705 shares outstanding, has an aggregate of 4,245,705 votes, or 56 per cent. Inasmuch as preferred stock is generally more closely held than common stock, the voting power of the preferred may prove quite significant.

In other instances the preferred stock has what may be referred to as contingent or vetoing power; that is, it has no voting power as such but in certain circumstances either it is given voting power or its consent is necessary to make the action of the management binding on the corporation. For example, Cudahy Packing Com-

pany 6 per cent preferred stock has no voting power. It is given two votes per share, however, if the company (a) is in default of three consecutive semi-annual dividends, or (b) fails to pay the dividend in any year in which net earnings are at least \$1,000,000, or (c) fails to pay the specified portion of dividends for one-half year in any year in which net earnings are at least \$700,000 or (d) without the consent of holders of two thirds of the outstanding preferred stock, acquires shares of stock or assets (except through collection of debt) and assumes debts or obligations of the same exceeding \$250,000.

Some preferred stocks have both voting power and vetoing power. For example, American Can Company 7 per cent preferred stock has six votes per share; at the same time, the corporate property cannot be mortgaged without the consent of two thirds of the preferred stock. Generally speaking, however, the voting or vetoing power of a preferred stock has little relation to its investment value.

**Redeemable.** Regardless of those preferences, some preferred stocks are redeemable at the option of the corporation. The redemption provision usually states the date on which the stock may be redeemed, the time at which notice must be given to the preferred stockholder, the extent to which the issue may be redeemed, and the price at which the stock is redeemable. For example, the 5 per cent preferred stock of Sunshine Biscuits, Inc., is redeemable at the option of the company at any time upon 30 days' notice, in whole or in part, and at \$105 a share and accrued dividends. Sunshine Biscuits, Inc., may redeem either the entire issue of preferred stock or any amount of the issue. At redemption it agrees to pay the stockholder \$105 a share and accrued dividend to the date of redemption. In other instances the call price is expressed as a schedule. For example, Dow Chemical \$4 preferred stock is callable at 112 to November 1, 1948; at 110 to November 1, 1953; and at 107 thereafter. American Airlines \$4.25 preferred stock was callable at 107 in 1944, at 106 in 1945, and at 105 thereafter. It is significant that in preferred stocks that are redeemable at varying prices during the period of the privilege in accordance with a prescribed schedule, the redemption price tends to decrease with the later dates. To the extent that redemption is postponed, the lower is the cost in cash to the corporation and the smaller is the return in cash to the investor when the privilege is exercised.

The fact that a preferred stock is redeemable offers no value to the holder. In a rising market the call price tends to set an upper

limit to the market price of the preferred stock.<sup>3</sup> Since the stock is callable at the option of the corporation, the latter usually calls the stock for redemption only when market conditions are to the issuer's advantage and, therefore, disadvantageous to the stockholder.<sup>4</sup>

In recent years some corporations, planning to redeem their preferred stock, offered the preferred stockholders a choice of cash or new preferred stock bearing a lower dividend rate in exchange for the old preferred stock. The willingness of the preferred stockholders to accept the new preferred stock was influenced by the federal capital gains tax. This was especially true of stockholders who acquired the old stock at substantial discounts. In the event of redemption at a premium in cash, those stockholders found themselves liable to a capital gains tax on the difference between the cost and the call price received. Since, under the present federal tax law, the exchange of one preferred stock for another of the same company does not subject the stockholder to a capital gains tax, the advisability of accepting stock instead of cash was apparent. Firestone Tire & Rubber Company adopted a variation of this method in redeeming its 6 per cent preferred stock at 105 and accrued dividends of \$1.50 a share with the proceeds of an offering of  $4\frac{1}{2}$  per cent preferred stock. Instead of making a direct offer to exchange old stock for new, an arrangement was made for underwriters and dealers to offer holders of the 6 per cent stock one share of  $4\frac{1}{2}$  per cent stock plus \$6.50 in cash in exchange for one share of the old 6 per cent stock.

**Classes of preferred stock.** In some instances a corporation may have several classes of preferred stock. Worthington Pump & Machinery Corporation, for example, has four classes of preferred stock: a prior preferred  $4\frac{1}{2}$  per cent convertible series, a prior preferred  $4\frac{1}{2}$  per cent series, a class A 7 per cent series, and a class B 6 per cent series. The prior preferred convertible series and the prior preferred series rank equally in their preference over the class A, class B, and common stocks as to assets and as to cumulative dividends at the rate of  $4\frac{1}{2}$  per cent annually. While both classes are redeemable in whole or in part on any dividend date on 30 days' notice, the former is redeemable at \$100 and the latter at \$105, with accrued dividends in each instance. In liquidation, the former

<sup>3</sup> This factor has been of little practical importance in the instance of the preferred stock of American Radiator & Standard Sanitary Corporation, since the call price is \$175.

<sup>4</sup> Remington Rand, Inc., has followed the practice of buying the preferred stock in the open market at a discount.

series is entitled to \$100 and accrued dividends regardless of the character of the liquidation. On the other hand, the latter series is entitled to \$105 in voluntary and \$100 in involuntary liquidation. The convertible series, in contrast with the non-convertible series, is convertible into one share of common stock. The class A and the class B stocks are subject to the preference of the prior preferred series but rank equally in their preference over the common stock as to assets and cumulative dividends. The class A, however, is entitled to a dividend at the rate of 7 per cent, in contrast to the class B, on which the rate is 6 per cent. Both classes are redeemable in whole or in part at any time on 30 days' notice, the former at \$115 and the latter at \$105, with accrued dividends in each instance. In voluntary liquidation the class A is entitled to \$115 and the class B to \$105, whereas in involuntary liquidation the liquidating value is \$100 for each stock.

**Significance.** Preferred stock is usually preferred as to dividends and as to assets. Whether the stock under consideration also possesses any or all of the other preferences — cumulative, participating, convertible — can be determined only by reference to the preferred stock provisions. Preferred stockholders, as a class, have an owner's interest with a limited maximum return. They assume more risk than the bondholders, for which they receive a higher rate of dividend, but less risk than the common stockholders, for which they must accept a limited return. The \$5 preferred stock of Goodyear Tire & Rubber Company is junior to first mortgage and collateral trust bonds and to the minority stockholders' equity in subsidiary companies, but senior to the common stock. In the absence of funded debt, however, preferred stock represents a senior interest. The \$7 preferred stock of International Harvester Company, for example, is the senior interest in the company.

**Common stock.** Common stock represents the basic ownership of the corporation. Although not all corporations necessarily have preferred stock outstanding, they do have common stock. The ownership interest in the earnings and in the assets is shared by the preferred stock and the common stock, but the interest of the common stock is subordinate to the interest of the preferred stock. The extent of subordination of the interest of the common stock of a specific company depends upon the presence of securities with prior interest. In some instances the common stock is subordinate to bonds and preferred stock. For example, the common stock of Goodyear Tire & Rubber Company is junior to first mortgage and

collateral trust bonds, to the minority stockholders' equity in subsidiary companies, and to the preferred stock. In other cases the common stock is subordinate only to the preferred stock. For example, the preferred stock of International Harvester Company is the only interest ahead of the company's common stock. In still other instances the common stock comprises the sole security issued by the company; as, for example, General Foods, General Electric, and Standard Oil of California.

**Classes.** In some companies the common stock is divided into classes. American Tobacco Company, for example, has common and common B stock, each with a par value of \$25. Each class is entitled to receive the same amount of dividend if any dividend is declared. The only distinction between the two classes is that the common stock has one vote per share, whereas the common B has no voting power. The unimportance attached to this distinction, however, is evidenced by the fact that both classes of stock have tended to sell at substantially the same price.

**Dividends.** The payment of dividends on common stock is contingent upon earnings and the discretion of the directors. Unlike the preferred stockholder, however, the common stockholder is not promised any specific rate of dividend. The declaration of dividends by the directors is subject to the corporate law of the state of incorporation. Under the law in New York State (Stock Corporation Law, Section 58):

No corporation shall declare or pay any dividend which shall impair its capital, nor while its capital is impaired, nor shall any such corporation declare or pay any dividend or make any distribution of assets to any of its stockholders, whether upon a reduction of the number or par value of its shares or of its capital, unless the value of its assets remaining after the payment of such dividend, or after such distribution of assets, as the case may be, shall be at least equal to the aggregate amount of its debts and liabilities, including capital.

The attitude of the courts toward the declaration of a dividend has been stated as follows: <sup>5</sup>

It is a fundamental rule relating to the management of corporations that it is within the discretion of the directors to determine when and to what extent a dividend shall be made, subject of course to the qualification that the same shall not encroach on the capital. Courts will not interfere with such discretion unless it be first made to appear that the directors have acted or are about to act in bad faith and for a dishonest purpose. It is for the directors to say, acting in good faith of course, when and to what extent dividends shall be declared.

<sup>5</sup> *Liebman v. Auto Strop Co.*, 241 N. Y. 427 (1926).

**Dividend policy.** The investor in common stocks should study the dividend policy of the company in whose common stock he is interested. Determination of the dividend policy requires analysis of the dividend record to ascertain (a) the amount of the dividend in relation to the earnings and (b) the form of the dividend.

Conservative management requires that the available earnings should not all be distributed as dividends; at least part of the earnings should be retained in the business. In the instance of American Can Company, all earnings in excess of preferred stock dividend requirements during the period 1901-1922 were used to build up properties, earning power, and working capital, and as a result no distribution was made to the common stockholders. Since 1923, when the company made its initial payment on the common stock, the dividend policy has been dictated by the company's expansion needs and current position. The impatient stockholder who insists that the management pay dividends before the company has accumulated adequate reserves is only jeopardizing his investment. In the long run he is likely to find that the company is unable to weather business storms because of insufficient financial resources and that the value of his interest in the earnings and assets is probably negligible.

On the other hand, retention of a large portion of the profits is not advantageous to the investor if the company has already built up adequate reserves. Under such circumstances the investor is justified in expecting the distribution of a large percentage of earnings. During the period 1937-1943, General Electric Company distributed an aggregate dividend of \$10.55 a share, or approximately 90 per cent of its earnings of \$11.66 a share, and Eastman Kodak Company distributed an aggregate dividend of \$43.75 a share, or about 73 per cent of its earnings of \$59.63 a share.

Analysis of dividend records reveals three general policies: (a) a regular dividend irrespective of current earnings, for example, American Telephone & Telegraph Company; (b) a dividend proportionate to current earnings, for example, General Motors Corporation and General Electric Company; and (c) a regular dividend at a minimum rate with occasional extra dividends, for example, companies in the petroleum industry. The chief difficulty with the first policy is that the dividend rate may be maintained too long after earning power has declined, as in the case of the New Haven Railroad in the early years of the present century. The second policy has become increasingly more common in recent years owing

to changing business conditions. It was especially common under the federal undistributed profits tax during 1937 and 1938.

**Form of dividend.** The dividend may be paid in cash, in stock, in scrip, or in property. The usual form is cash. A stock dividend is paid in shares of the company. The Sun Oil Company, for example, declared a 10 per cent stock dividend in 1944. A holder of 100 shares of common stock received ten additional shares as a dividend, thus increasing his holdings to 110 shares. A stock dividend represents the plowing back of profits by the capitalization of a portion of the earnings. The dividend declared by the Sun Oil Company resulted in the transfer of about \$10,000,000 from the earned surplus account to the capital stock account. In some instances the dividend is paid partly in cash and partly in stock. During the past decade International Business Machines Corporation has paid an annual dividend of \$6 in cash and 5 per cent in stock of the company.<sup>6</sup> Occasionally a dividend is paid in scrip. A corporation that wishes to maintain an unbroken dividend record but temporarily cannot reduce its cash position in order to pay the current dividend in cash may pay the dividend in scrip, by which it promises to pay the dividend in cash at some future date, say three months.

A dividend is occasionally paid in property. General Electric Company paid a dividend on the common stock of one sixth of a share of Radio Corporation of America common stock, of which the company had to dispose in accordance with a regulation of the federal government. National Distillers Products Corporation once declared a dividend in warehouse receipts for whiskey on the basis of one case for each five shares of common stock held.<sup>7</sup>

In order to prevent abuses in trading in stocks on which a property dividend may be contemplated and before adequate information is available on the nature and amount of the dividend to be distributed, the Securities and Exchange Commission has adopted two rules. The first rule requires the filing of reports promptly by issuers of securities registered on a national securities exchange whenever they decide to declare dividends or distributions in the form of an asset other than cash, stock, or a warrant for stock. A telegraphic report must be filed with each exchange on which any security of the registrant is registered and with the Commission not

<sup>6</sup> The cash dividend was increased to \$7.50 in 1936; the stock dividend was reduced to 2 per cent in 1935 and to 3 per cent in 1936.

<sup>7</sup> The Internal Revenue Bureau fixed the value of the dividend for tax purposes at \$7 a share.

later than midnight of the day upon which the dividend is decided. The report must contain a full description of the contemplated dividend or distribution, and similar reports are required whenever the terms are changed and upon actual declaration. If the Commission finds that the information on the proposed transaction is inadequate to permit investors to make a proper appraisal of the security's value, it may order a temporary suspension of trading in the security on the exchange on which it is registered, pending availability of adequate information. The second rule prohibits over-the-counter trading in a security during any period when the Commission has suspended exchange trading in the security "to prevent fraudulent, manipulative and deceptive practices." The second rule operates automatically to outlaw over-the-counter trading during exchange trading suspension under the first rule.

The form of dividend payment is usually influenced by the working capital position of the company. Payment in cash presupposes adequate cash to meet the dividend payment and still provide ample cash for working capital purposes. On the other hand, payment in stock leaves the cash position of the company intact. While the earnings of International Business Machines Corporation have been maintained over a considerable period, the pressing need for adequate working capital in the form of cash has resulted in the company paying part of the dividend in stock. Stock dividends give the stockholders evidence of the increase in their interest without reducing the working capital by a cash distribution. In some instances, however, the reduced surplus may be eliminated by a few bad years and any attempt to maintain the same dividend rate on the increased capitalization without regard to working capital position may prove disastrous.

Stockholders of companies which declare stock dividends have been warned by the New York Stock Exchange to observe the relation that exists between such dividends and current earnings. The Exchange has pointed out that such dividends should be capitalized against earned surplus and that the amount of earnings or earned surplus to be capitalized for each dividend should be at least the fair market value per share. Unless this relationship is maintained, the stockholder may believe that the market value of the shares which he receives represents his pro rata share of capitalized current earnings, whereas the market value may exceed such income materially. The stockholder who retains the shares received as dividends instead of selling them has increased the number of shares



he owns but has not increased his proportionate equity in the company. If, as the Exchange urged, stock dividends were capitalized at market values and against earned surplus or current earnings, surplus would place a restraint upon the declaration of stock dividends. The Exchange quoted two significant statements from a research bulletin of the American Institute of Accountants: "An ordinary stock dividend is not income from the corporation to the recipient in any amount"; and "upon receipt of such a dividend the cost of the shares previously held should be allocated equitably to such shares received as a stock dividend."

**Surplus.** Stockholders should not rely upon accumulated earnings and the presence of a large surplus to carry dividends through poor years. The availability of such earnings for dividends depends upon the form in which they have been accumulated — whether in a liquid form or as investments in fixed property. In the former case, earnings are available for dividends in years of decreased income; in the latter case, the investment of surplus earnings in fixed property precludes their availability for dividends in poor years. For example, General Electric Company has followed the policy of building up and maintaining "plenty of reserve strength" as evidenced by cash and marketable securities holdings of the company. The building up of those large liquid resources has been due, in part, to the dividend policy of the management. For the period 1921–1933 the company added to surplus from earnings an average of 43 cents for every dollar paid out in dividends. The company was able to maintain dividend payments continuously in spite of the decline in earnings after 1929, partly because of the reduction in the dividend rate but largely because of the substantial liquid working capital. The average annual payment to stockholders by the Pennsylvania Railroad 1933–1943 was only 46.5 per cent of earnings and, in the last four years of that decade, only 40 per cent of earnings. This more cautious dividend policy of recent years appeared attributable to conservation of cash for possible postwar needs and for reduction of debt. On the other hand, the continuous investment of earnings in fixed assets to the detriment of working capital may force a company to reduce or eliminate the payment of dividends in years of declining earnings.

**Contractual limitations.** In some instances the payment of dividends on the common stock is limited by provisions in the bond indenture or by the preferred stock provisions. For example, the indenture of the Owens Illinois Glass Company debenture 2 $\frac{3}{4}$ 's of

1952 provides that no dividend may be declared or paid except out of consolidated net income earned subsequent to December 31, 1936. The consolidated earned surplus on that date was \$18,430,943. The actual surplus available for dividends, therefore, is the excess of the current surplus over the 1936 surplus of \$18,430,943. Likewise the indenture covering B. F. Goodrich first mortgage  $4\frac{1}{4}$ 's of 1956 prohibits the company from declaring dividends (except stock dividends) on any class of its stock or from retiring or acquiring any stock by purchase or redemption if such action would reduce the consolidated current assets of the company and its subsidiaries to less than the total consolidated indebtedness.

Likewise the payment of dividends on the common stock may be restricted by the preferred stock provisions. Under the stock provisions of Cudahy Packing Company, no dividends can be declared on the common stock unless the entire accrued preferred stock dividends have been paid and the current half-yearly dividends declared on both classes of preferred stock. In addition, no dividends can be declared on the common stock which would reduce surplus below \$3,500,000. The common stock of Worthington Pump & Machinery Corporation did not receive any dividend during the period 1922-1942 because of the preferred stock provisions. A capital readjustment was made in 1937 to permit payments of regular dividends to holders of the preferred stocks. Under the plan the new  $4\frac{1}{2}$  per cent prior preferred stock was created and offered in exchange for class A 7 per cent preferred and class B 6 per cent preferred. Though the bulk of class A and class B preferred stock was exchanged for the new  $4\frac{1}{2}$  per cent preferred, it was not until 1943 that the dividend arrearage was entirely liquidated and the way cleared for the declaration of the first dividend on the common stock in twenty-one years.

**Dividend continuity.** Some companies have paid dividends continuously over a long period. A selected group of those companies includes the Pennsylvania Railroad (1848), American Telephone & Telegraph (1885), Diamond Match (1882), Standard Oil Company of New Jersey (1882), Consolidated Edison Company of New York (1885), and United Gas Improvement Company (1885). The payment of continuous dividends does not necessarily mean, however, that the company has paid the same dividend every year. It means, rather, that the company has paid a dividend every year, the amount of which may have varied from year to year. For example, while the Pennsylvania Railroad has paid dividends continuously since

1848, the amount has varied, especially in recent years, from \$4 in 1930 to 50 cents in 1932-1935 and in 1938.

**Stock changes.** Corporations sometimes change the number of shares of capital stock by either a split-up or a reverse split. Many corporations took advantage of the extended rise in the stock market in 1944-1945 to plan a series of stock split-ups on the largest scale since 1929. Among the corporations that split up their stock were Westinghouse Electric Corporation (four for one), Louisville & Nashville Railroad (two for one), American Airlines (two for one), Pepsi-Cola (three for one), and Schenley Distillers (three for two).

*Methods.* A stock split-up is accomplished through an increase in the number of shares by reducing the par or stated value of the stock. For example, Westinghouse Electric Corporation split both its preferred and its common stock on a four-for-one basis by reducing the par value of each class of stock from \$50 to \$12.50 a share. Prior to the split-up, the authorized capital consisted of 4,000,000 shares with a par value of \$50, of which 79,974 preferred and 3,132,816 common shares were outstanding. As a result of the split-up, the authorized stock was increased to 16,000,000 shares with a par value of \$12.50, of which 319,896 preferred and 12,531,264 common shares were outstanding. Louisville & Nashville Railroad increased the number of shares from 1,170,000 to 2,340,000 by reducing the par value from \$100 to \$50 a share. Each stockholder received two shares of the new \$50 par value stock in exchange for one share of old \$100 par value stock.

*Reasons.* A corporation may be prompted to split up its stock by any one of five reasons. The corporation may desire to provide greater marketability for its stock. The effect of the split-up is to place the stock in a lower price bracket, where it is more likely to attract the attention of new investors and thus give the stock a broader market. The split-up of a stock on a two-for-one basis results in twice as many shares outstanding, thus broadening the market in the stock. At the same time the market value per share is reduced, thus making it available for a larger number of investors. Every split-up results in an increase in the number of shares outstanding. The increase is always proportional to the rate of exchange; that is, the four-for-one split-up by Westinghouse Electric Corporation increased the number of common shares outstanding from 3,132,816 to 12,531,264.

The reduction in the market price per share of the new stock, however, is not necessarily proportionate to the rate of exchange.

The mathematical axiom that the sum of the parts is equal to the whole seems not to hold true in the stock market. When the ownership of a company is split up into twice as many shares, the new stock usually sells for somewhat more than half as much as the old stock. For example, prior to the split-up of American Airlines common stock on a two-for-one basis, the old stock was selling at about 80, which meant that the adjusted price of the new stock on the basis of the split-up should be 40. The market price of the new stock, however, was about 45. Similarly, the old stock of Schenley Distillers sold at  $52\frac{1}{8}$  before the three-for-two split-up, which would amount to  $34\frac{3}{4}$  a share for the new stock on an adjusted basis. The market price of the new stock, however, was  $43\frac{1}{8}$ .

A corporation may wish to provide additional shares for the acquisition of new properties through the exchange of stock. For example, assume a corporation with 1,500,000 shares of authorized stock, each with a par value of \$100, of which 1,000,000 shares are outstanding and 500,000 shares are unissued. Should the corporation plan to acquire new properties through an exchange of stock, it would have only 500,000 shares of unissued stock available. If it splits up its stock by reducing the par value to \$50 a share, it increases the number of shares of unissued stock to 1,000,000.

A split-up of the stock permits a greater distribution of profits without raising the dividend rate. If a corporation that pays a dividend of \$2 a share on 1,000,000 shares of no par value stock with a stated value of \$100 splits up the stock into 2,000,000 shares by reducing the stated value to \$50 a share, the same dividend rate of \$2 a share would permit the payment on the new stock of the equivalent of \$4 a share in dividends on the old stock. The holder of one share of the old stock received \$2 a share. As a result of the split-up, he still receives \$2 a share, but since he now has twice as many shares he receives \$4 for every \$2 previously received.

In order to avoid reporting excessively large earnings per share, a company may seek to reduce the reported earnings per share by diffusing the earnings among a larger number of shares. A corporation with a net income of \$10,000,000 and 1,000,000 shares of \$100 par value stock outstanding earns at the rate of \$10 a share. If the stock is increased to 2,000,000 shares by a reduction in the par value from \$100 to \$50, the earnings a share are reduced to \$5. Schenley Distillers Corporation, whose earnings rose from \$4.63 a share in 1942 to \$7.66 in 1944, split up its stock on a three-for-two basis and later split it again on a four-for-three basis.

Dividend rates may be reduced by a split-up without sacrifice of income to the stockholder. In the instance of the Louisville & Nashville Railroad split-up, the dividend rate of \$7 a share on the \$100 par value stock was reduced to \$3.50 on the \$50 par value stock. The company declared an initial dividend of 88 cents on the new \$50 par value stock, which, while not characterized as a "quarterly" dividend, implied an annual rate of \$3.50. Inasmuch as the stockholder received two shares of \$50 par value stock in exchange for one share of \$100 par value stock, the implication was that he would continue to receive a total of \$7 on his holdings. The Standard Oil Company of Ohio split up its stock on a two-and-one-half for one basis by exchanging the old \$25 par value stock for two and one-half shares of new \$10 par value stock. The company had distributed an annual dividend on the old stock at the rate of \$2.50 a share. At the time of the split-up, however, the management announced the expectation of placing the new stock on a regular annual dividend basis of \$1 a share.

*Reverse split-up.* A company may adjust its capital structure by a reverse split-up. In a reverse split-up the corporation reduces the number of shares in order to raise the depressed shares to higher price brackets where they will command greater confidence. The creation of a better market price for the stock may pave the way for new financing. United Cigar-Whelan Stores Corporation changed the authorized common stock from 6,000,000 shares of 10 cents par value to 3,000,000 shares of 30 cents par value and exchanged three shares of the old stock for one share of the new stock. As a result the outstanding stock was reduced from 5,709,924 shares to 1,903,308 shares. The change did not affect the aggregate par value of the outstanding stock nor of the surplus but it did leave a balance of 1,096,692 shares of authorized and unissued shares available for use at the discretion of the management. The initial market price of the new stock was  $10\frac{7}{8}$ , compared to a previous price of less than 2 on the old stock.

**Guaranteed stocks.** Guaranteed stocks, both preferred and common, are those upon which the dividend is guaranteed by a company other than the issuer. Guaranteed stocks are confined almost entirely to the railroad field.<sup>8</sup> As a group, they arose out of the leasing of one railroad (lessor) by another railroad (lessee and guarantor) in the process of consolidating the older or smaller lines into a railroad system. The properties of the smaller lines were

<sup>8</sup> See Chapter Two for a discussion of guaranteed bonds.

highly desirable in the building up of the main routes of the system or for their value in the origination of traffic. The stockholders of the smaller lines were induced to approve the leasing of their line to the larger road by the latter guaranteeing a specified annual dividend on the preferred and common stocks. For example, the Pennsylvania Railroad leased the Pittsburgh, Fort Wayne & Chicago Railroad in 1871 under a 999-year lease which will expire in 2870. The Pittsburgh, Fort Wayne & Chicago Railroad property constitutes the main line of the Pennsylvania Railroad from Pittsburgh to Chicago. Under the lease the Pennsylvania Railroad guarantees a 7 per cent dividend on both the preferred stock and the common stock of the Pittsburgh, Fort Wayne & Chicago Railroad. Since each class of stock has a par value of \$100, each is entitled to an annual dividend of \$7.

The payment of the rental by the lessee railroad is either in the form of a direct payment of the dividend on the stock to the stockholders or a lump-sum payment to the lessor railroad, which in turn makes the distribution to its stockholders. Most of the leases held by the Delaware, Lackawanna & Western Railroad, for example, provide for payment of the rentals directly to the stockholders, but under the lease of the Cayuga & Susquehanna Railroad the rental is paid in a lump sum directly to the lessor railroad.

A guaranteed stock assumes the nature of a bond in that the dividend on the guaranteed stock, as part of the rental, is a fixed rather than a contingent charge to the lessee. A guaranteed stock differs from a guaranteed bond, however, in two important respects. First, in the instance of a stock, the guarantee applies only to the dividend, whereas in the case of a bond the guarantee applies to the interest and often to the principal as well. Second, in the event of failure to pay the dividend on the guaranteed stock, the stockholder can maintain a cause for action only against the guarantor, whereas in the event of default in the payment of interest or principal on the guaranteed bond, the bondholder has a dual claim enforceable against either the obligor or the guarantor or both.

*Investment position.* The investment position of a guaranteed stock depends upon (a) the nature of the guarantee, (b) the value of the underlying property to the guarantor, and (c) the financial responsibility of the guarantor. Though adjustments have been made in some cases where the guarantor has become bankrupt,

many railroads have continued to pay dividends on guaranteed stock even while in receivership. For example, the 7 per cent stock of the Peoria & Bureau Valley Railroad, guaranteed as to dividends by the Rock Island, Chicago & Pacific Railroad, was selling at about 100, while the Rock Island, Chicago & Pacific Railroad first mortgage 4's of 1988, in default, were selling at 15. The good record of guaranteed stocks has been due in most cases to the importance of the lessor's property to the lessee. If dividends were not paid, a default under the lease would have resulted and the property returned to the lessor stockholders. Guaranteed railroad stocks, as a class, have a good dividend record. Approximately two thirds of the 146 issues outstanding have paid dividends continuously for over forty years. Prior to 1936 the record was practically clear of defaults and many of the issues survived several reorganizations. There have been comparatively few defaults since 1936.

Under a court ruling, a leased railroad is obliged to pay income taxes on amounts received as lease rental by it or its stockholders. Federal income and excess profits tax burdens have led some railroads to seek the termination of such leases through merger. The New York Central Railroad, for example, had a lease agreement with the New York & Harlem Railroad under which rent was paid in the form of a dividend at the annual rate of 10 per cent to the stockholders of the latter railroad. Since the New York Central Railroad owned approximately 98 per cent of the outstanding shares of the New York & Harlem Railroad common stock, it was really paying taxes on dividends paid to itself. To effect a merger of the two railroads it was necessary for the New York Central Railroad to acquire the minority stock of the New York & Harlem Railroad, which aggregated 62,500 shares. The New York & Harlem Railroad issued \$7,820,000 of 100-year 4 per cent non-callable mortgage bonds, which the New York Central Railroad purchased. The latter railroad gave those bonds to the minority stockholders of the former railroad in exchange for their stock at the rate of \$125 of new bonds for each share of stock.

In like fashion, the Delaware, Lackawanna & Western Railroad negotiated an exchange of bonds for the guaranteed stock of some of its leased lines — the Morris & Essex Railroad, the Utica, Chenango & Susquehanna Valley Railway, and the Oswego & Syracuse Railroad. A similar step was taken by the Delaware & Hudson Railroad with respect to its leased lines — the Rensselaer & Saratoga Railroad and the Albany & Susquehanna Railroad.

## Review Questions

1. Define a share of stock.
2. Explain the significance of a stock certificate.
3. Discuss the nature of the stockholder's interest in the corporation.
4. Distinguish between par value and no par value stock.
5. Discuss the relation between par value and market value.
6. Indicate the distinction between the position of the bondholder and of the stockholder.
7. Define a preferred stock.
8. How may the preferred stockholder ascertain the nature of the preferences accorded him by the preferred stock?
9. Name the preferences that a preferred stock may have.
10. How is the annual dividend rate on a preferred stock stated?
11. In what way is the dividend rate on the preferred stock comparable to the interest rate on a bond?
12. In what way is the dividend rate on the preferred stock unlike the interest rate on the bond?
13. Discuss the investment significance of a preferred stock as to dividends.
14. What is meant by a preferred stock dividend being "in arrears"?
15. Name two usual methods of eliminating preferred stock dividend "arrears."
16. Discuss the investment significance of the cumulative feature in a preferred stock.
17. Distinguish between a preferred stock that is non-participating and one that is participating simply.
18. Discuss the investment significance of participation.
19. What is meant by a convertible preferred stock?
20. Discuss the two factors that influence the value of a convertible preferred stock.
21. What is meant by a stock "preferred as to assets"?
22. What is the relation between the amount of the preference and the nature of the liquidation?
23. Discuss the investment significance of the preference as to assets.
24. Distinguish between voting and vetoing power of a preferred stock.
25. What is meant by a call clause in the preferred stock provisions?
26. In preferred stocks that are either callable or convertible at prices varying during the period of the option, why does the redemption price decrease and the conversion price increase with the later dates?
27. Discuss the investment significance of the call option in a preferred stock.
28. Discuss the investment position of preferred stockholders relative to bondholders and common stockholders.
29. Define common stock.
30. Why are common stocks called "equities"?
31. What factors govern the payment of dividends on common stock?
32. Name and explain the four forms in which dividends may be paid.
33. How may the dividend policy on a common stock be determined?
34. Name and explain three general dividend policies.



35. Discuss the relation of a large surplus to dividend payments.
36. In what ways may the payment of common stock dividends be limited by bond or preferred stock provisions?
37. Explain the meaning and significance of a stock split-up and a reverse split-up.
38. Define a guaranteed stock.
39. Name two respects in which a guaranteed stock differs from a guaranteed bond.
40. Discuss the investment position of a guaranteed stock.

### Assignment

- (a) Compare the following investment features of the preferred stocks of General Motors, Consolidated Edison (N. Y.), and United States Steel: name of stock, dividend rate, par value, asset preference, voting power, vetoing power, cumulative feature, arrearage, callable, convertible, participation, subject to prior bonds, listed.
- (b) Determine the annual dividend in dollars of the following preferred stocks:

	<i>Dividend Rate</i>	<i>Par Value</i>
A . . . . .	7 per cent . . . . .	\$100
B . . . . .	7 per cent . . . . .	\$ 50
C . . . . .	6 per cent . . . . .	\$ 25
D . . . . .	\$5 . . . . .	No Par

- (c) A corporation has outstanding \$3,000,000 of common stock and \$2,000,000 of 5 per cent preferred stock. Each class of stock has a par value of \$50. If the corporation distributes \$600,000 as current annual dividends, determine the dividend (in dollars and in rate) which would be paid on each class of stock if the preferred stock is cumulative, participating simply, and is in arrears for two years' annual dividend.
- (d) A company that has outstanding 1,500,000 shares of immediately participating 4 per cent preferred stock (par value \$80) and 3,500,000 shares of common stock pays a dividend of \$5,760,000 on the preferred stock and \$2,240,000 on the common stock. Indicate how much of the preferred stock dividend was a participating dividend.
- (e) A preferred stock, paying \$1.50 a share annual dividend, is convertible into  $1\frac{1}{4}$  shares of common stock, which pays an annual dividend of \$2 plus extra dividends. Compute the dividend a preferred stockholder would receive were he to convert the preferred stock into common stock.
- (f) Indicate the effect upon the asset and liability items in the balance sheet of the payment of a dividend on the common stock in (1) cash, (2) scrip, (3) stock, and (4) property.
- (g) A company that had 38,280 shares of \$5 cumulative preferred stock and 141,792 shares of common stock outstanding reported as follows:

	<i>This Year</i>	<i>Last Year</i>	<i>Previous Year</i>
Preferred Stock:			
Earned per share . . . . .	\$31.92	\$22.02	\$17.08
Dividend paid . . . . .	7.50	nil	nil
Common Stock:			
Earned per share . . . . .	7.27	4.60	3.26
Dividend paid . . . . .	nil	nil	nil

Account for the failure to pay a dividend on the common stock in each year in view of the earnings on the common stock.

- (h) A stockholder purchased 100 shares of common stock of a company in 1943. The company split up the stock on a four-for-one basis in 1944 and again on a three-for-two basis in 1945. Compute the number of shares that the stockholder would own after the split-up in 1945.
- (i) Account for the change in the price of Sears Roebuck common stock from  $143\frac{1}{4}$  on October 22, 1945, to  $37\frac{1}{2}$  on October 23, 1945, following a four-for-one split-up of the stock.
- (j) Indicate the price range of the following common stocks since 1932: (1) Eastman Kodak, (2) Norfolk & Western, (3) International Business Machines, (4) Du Pont, (5) Allied Chemical, and (6) American Telephone & Telegraph.
- (k) Indicate the guarantor and the nature of the guarantee on the stocks of the following railroads (1) Beech Creek, (2) Boston & Albany, (3) Cleveland & Pittsburgh, (4) United New Jersey Railroad & Canal, and (5) Vicksburg, Shreveport & Pacific.

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## CHAPTER FOUR

# SECURITY MARKETS

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**Introduction.** Securities are traded either on an exchange or over the counter. Issues traded on an exchange are bought and sold through brokers. A broker is a member of the exchange and acts as an agent in executing the orders of a customer to buy or to sell securities traded on the exchange. He buys and sells for the account and risk of the customer; he does not possess an ownership interest in the securities so bought or sold. He may, and often does, act as a principal in purchasing and selling for his own account. As a principal, however, he must give precedence to orders held for others at the same price. His compensation as a broker is in the form of a commission paid by the customer for whom he executes the order.

Securities traded over the counter, on the other hand, are bought from and sold to dealers. An over-the-counter dealer acts as a principal in buying directly from or selling directly to a customer. He purchases securities outright and acquires ownership of them. He sells securities in outright sale, delivering the securities in which he actually has ownership. His compensation is in the form of a profit representing the difference between the price at which he sells the security to the customer and the price at which he purchased the security. The over-the-counter dealer may also act as a broker by executing orders for his customers on a brokerage basis.

**National securities exchanges.** The principal function of a securities exchange is to provide a convenient market place where seasoned securities may be bought and sold. Trading in a security listed on the exchange is concentrated at a "post" on the trading floor, which constitutes the "market."

**Groups of securities.** Exchanges are allowed to have two groups of securities: those that are regularly listed and those that are not listed but are admitted to trading privileges. Some exchanges, such as the New York Stock Exchange and the Chicago, Cincinnati,

Cleveland, St. Louis, San Francisco, and Washington stock exchanges, require that all security issues traded on their floors be listed. Trading on the floor of the New York Stock Exchange, for instance, is restricted to those securities that have been admitted to the Exchange, or, as they are commonly called, "listed" securities.<sup>1</sup>

**Listing.** A corporation seeking to have its security listed on the New York Stock Exchange must file a formal application with the Exchange. The applicant must be a going concern with substantial assets or demonstrated earning power, or both. Particular emphasis is placed by the Exchange upon the degree of national interest in the company, its standing in its field, the character of the market for its products, its relative stability and position in its industry, and whether or not it is engaged in an expanding industry with prospects of maintaining its position. The particular security for which listing is sought must be sufficiently widely distributed to offer reasonable assurance that an adequate auction market in the security exists. The data submitted in support of the application must include: (a) a brief description of the company's business, its products, date of organization, markets where the security to be listed is traded, available data as to recent price range and volume of trading; (b) latest available income account, surplus account, and balance sheet, and copies of annual reports for the past five years; (c) a detailed schedule showing the distribution of the security.

**Listing fees.** An applicant company whose security is accepted for listing has a choice of either of two schedules of listing fees. Schedule A provides for a continuing fee with an initial payment at the time of listing of \$50 per 10,000 shares of stock or fraction thereof, with a minimum initial fee of \$2,000 and a continuing annual fee for a period of fifteen years of \$75 per 100,000 shares with a minimum annual fee of \$200. For companies having more than 2,000,000 shares outstanding, the continuing fee is \$50 per 100,000 shares for all shares in excess of 2,000,000 shares. Schedule B provides for a fee of \$120 per 10,000 shares or fraction thereof, with a minimum fee of \$5,000 at the time of listing. While under this schedule no continuing fee is payable, a further fee amounting to one quarter of the initial fee is payable if the issuer changes the name of the corporation, the par value of the security, or the name

<sup>1</sup> The New York Stock Exchange discontinued its unlisted trading department in 1910.

of the security. In addition to the listing fee, the applicant company must pay the cost of printing the listing application.

*Transfer facilities.* Facilities for the transfer and registration of stock must be maintained in accordance with the rules of the Exchange. The transfer agent and the registrar may not be identical, and both must be acceptable to the Exchange.<sup>2</sup> The registrar must be a bank or trust company. The transfer agent or registrar may not be changed, nor may additional transfer agents or registrars be appointed without the approval of the Exchange.

*Significance of listing.* The fact that a security is listed, however, does not place upon it the stamp of investment quality. The listing application is designed to serve the dual purpose of (a) placing before the Exchange the information essential to its judgment as to the suitability of the security for public trading on the Exchange and (b) providing the investing public with information needed to judge the qualities of the security. The listing of a security by the Exchange simply means that the Exchange regards the issue as suitable for public trading on the floor of the Exchange.

**Unlisted trading privilege.** Many exchanges, including the New York Curb Exchange, have also granted unlisted trading privileges to certain issues of securities. Approximately 900 stock issues and 175 bond issues are admitted to unlisted trading privileges on national exchanges. In contrast to a listed security, which becomes listed on an exchange through the initiative of the issuer, an issue is admitted to unlisted trading privileges on an exchange through the initiative of the exchange itself.

Unlisted securities that are admitted to trading privileges are divided into three groups: those that had already been admitted prior to March 1, 1934; those that are regularly listed on another exchange;<sup>3</sup> and those of companies on which there is available information substantially equivalent to that required for duly listed securities. A security may be admitted to unlisted trading privileges only with the consent of the Securities and Exchange Commission, which must be satisfied that there exists in the vicinity of the exchange a sufficiently widespread public distribution of the issue and sufficient public trading activity in it to render the extension of the

<sup>2</sup> Except under unusual circumstances, the transfer agency must be located south of Chambers Street in the Borough of Manhattan, New York City.

<sup>3</sup> The common stock of Consolidated Edison Company of New York, which is listed on the New York Stock Exchange, has unlisted trading privileges on the Boston, Philadelphia, and San Francisco stock exchanges; the common stock of Seiberling Rubber Company, which is listed on the Cleveland Stock Exchange, is also traded on the unlisted section of the New York Curb Exchange.

privilege "necessary or appropriate in the public interest or for the protection of investors."<sup>4</sup> Unlisted trading privileges may be terminated only by the Commission, and then either upon the initiative of the Commission or upon application by the broker or dealer who makes or creates the market in the security, or by any other persons having a bona fide interest in such termination.<sup>5</sup>

**The New York Stock Exchange.** The preëminence of the New York Stock Exchange is evidenced by the fact that it handles approximately 85 per cent of the sales on registered exchanges, 75 per cent of the trading in stocks, and 90 per cent of the trading in bonds on the exchanges. The New York Stock Exchange handled a record volume of 1,126,000,000 shares in 1929. In 1933, when industry was engulfed by depression but security trading was stimulated by devaluation of the dollar, 675,000,000 shares exchanged ownership. The bull market of 1936 involved a volume of 496,000,000 shares.

**Membership.** It is a voluntary association of individual members. The membership was increased in 1929 from 1,100 to 1,375, or by 275 seats, each member receiving the right to one fourth of a new seat which he could dispose of by sale or transfer within three years. The membership was brought to the present total of 1,375 by the transfer of the last of those rights on March 3, 1932. The price of a membership has ranged from \$500,000 in 1929 to \$17,000 in 1942.

Members of the Exchange may be divided roughly into four classes: (a) commission brokers, who constitute about one half of the membership and who handle buying and selling orders in stocks or bonds for the general public for a commission; (b) specialists, comprising one quarter of the membership, who, restricting their trading activities to one or more stocks, buy and sell those stocks for their own account or as floor brokers for other members who have orders to execute in those stocks; (c) odd-lot brokers, representing one tenth of the membership, who buy and sell in less than the standard 100-share trading lots; and (d) floor traders who trade solely for their own account.

**Exchange registration.** All securities exchanges are subject to federal supervision. Under the Securities Exchange Act of 1934, it is unlawful to effect any transaction on an exchange unless the

<sup>4</sup> An issue admitted by the Commission to unlisted trading on an exchange is deemed to be registered with the Commission within the meaning of the Securities Exchange Act of 1934.

<sup>5</sup> Issuers whose securities are admitted to unlisted trading privileges are not required to pay any fees to the exchange

exchange is either registered with the Securities and Exchange Commission as a "national securities exchange" or has been exempted from such registration by the Commission. An exchange may register with the Commission by filing the prescribed registration statement. The exchange is registered if, in the opinion of the Commission, it —

... is so organized as to be able to comply with the provisions of this title and the rules and regulations thereunder, and that the rules of the exchange are just and adequate to insure fair dealing and to protect investors.

An exchange may be exempted from registration by the Commission, however, when:

... by reason of the limited volume of transactions effected on such exchange, it is not practicable and not necessary or appropriate in the public interest or for the protection of investors to require such registration.

Among the exchanges exempted by the Commission are the Colorado Springs, Honolulu, Minneapolis-St. Paul, Richmond, and Wheeling exchanges. The Wheeling Stock Exchange, for example, consists of seven members representing four firms. The exchange has no trading floor. The members submit their bids and offers to the secretary by telephone and also ascertain bids and offers by this means; members thereafter deal with each other directly. Transactions, however, must be reported to the secretary immediately. The trading unit is ten shares; smaller amounts are considered odd lots.

**Security registration.** All securities traded on an exchange, except public issues of domestic origin (including federal obligations and instrumentalities and state and municipal bonds), must also be registered with the Commission. While the registration of a security with the Commission is separate and distinct from the listing of the security with the exchange, the approval of listing by the latter is one of the prerequisites to effectiveness of registration of a listed security. Registration under the Securities Exchange Act of 1934 requires the filing with both the exchange and the Commission of a registration statement conforming to the rules of the Commission, and the certification by the exchange to the Commission that it has received what purports to be a registration statement and has approved the security for listing and registration. Ordinarily registration becomes effective automatically thirty days after receipt by the Commission of the exchange's certification, but may become effective within a shorter period by order of the Commission.

The information required of the issuer in the application for registration may be summarized as follows:

- (a) The organization, financial structure, and nature of the business.
- (b) The terms, position, rights, and privileges of the different classes of securities outstanding.
- (c) The terms on which securities are to be and during the preceding three years have been offered to the public or otherwise.
- (d) The directors, officers, and underwriters, and each security holder of record holding more than 10 per cent of any class of any equity security of the issuer, their remuneration, and their interests in the securities of and their material contracts with the issuer and any person directly or indirectly controlling or controlled by or under direct or indirect common control with the issuer.
- (e) Remuneration to others than directors and officers exceeding \$20,000 a year.
- (f) Bonus and profit-sharing arrangements.
- (g) Options existing or to be created in respect of their securities.
- (h) Balance sheets and profit and loss statements for not less than the three preceding fiscal years, certified by independent public accountants.
- (i) Any further financial statements which the Commission may deem necessary or appropriate for the protection of investors.

The issuer must agree to keep such information reasonably current thereafter.

**Over-the-counter market.** The over-the-counter market is an equally essential part of the securities markets. It provides facilities for the distribution of new issues among investors and for trading in outstanding issues. The securities traded may be classed as (a) those traded exclusively over-the-counter and (b) those traded both on an exchange and over-the-counter. The issues traded exclusively over-the-counter include such issues as United States Treasury notes and bills, territorial bonds, Federal Land Bank and Federal Home Loan Bank bonds, state bonds, municipal bonds, railroad equipment trust obligations, bank and insurance company stocks, investment trust issues, and real estate bonds.<sup>6</sup> In addition, many railroad, public utility, and industrial issues are traded exclusively over-the-counter. They consist primarily of small or medium-size issues of small companies. Prominent among the issues that are traded both on an exchange and over-the-counter are United States Treasury bonds and such instrumentalities as Federal Farm Mortgage Corporation and Home Owners' Loan Corporation issues. The volume of trading in these issues, especially Treasury bonds, in the over-the-counter market ordinarily exceeds that on the exchanges. Since transactions in those securities are usually in large blocks, they can be completed more readily over-

<sup>6</sup> Most bank, insurance company, and investment trust issues are traded over-the-counter, but a few are traded on the Exchange.



the-counter than on an exchange. In addition, certain railroad, public utility, industrial, and foreign government issues that have inactive trading markets on the exchanges are also traded over-the-counter.

**Dealers.** The market in over-the-counter securities is made by dealers within and between their offices at prices established by individual negotiation, that is, through bid and offer prices. Dealers "create" and "maintain" markets in the securities. A dealer creates a market for a security when he is prepared both to buy and to sell that security at the prices he quotes. He maintains such a market when he continues over a period to quote the prices at which he is ready both to buy and to sell. A dealer creates and maintains a market for any issue of bonds or of stock by announcing openly to the other dealer and broker houses that he stands ready both to buy and to sell that security at the bid price and the offering price that he quotes to those who inquire. For example, a dealer may quote the "market" in a security as "95-95 $\frac{3}{4}$ ." In that way the dealer announces that he will buy the security from sellers at 95 and will sell to buyers at 95 $\frac{3}{4}$ . The combined bid and offering price quotation is called the "market." He quotes the market without knowing in advance whether the inquirer intends to buy or to sell. The option to buy or to sell at the quoted price lies with the inquirer.

The securities houses that act as dealers or brokers in the over-the-counter market include investment banking houses, over-the-counter houses, municipal bond dealers, government bond dealers, stock exchange member firms which operate over-the-counter trading departments, and dealer banks. Many investment banking houses have trading departments through which they deal in outstanding bonds and stocks. They also are extremely active in the primary distribution of new issues of corporate, municipal, and other securities.<sup>7</sup> Over-the-counter houses are engaged chiefly in buying and selling corporate bonds and stocks or foreign securities as dealers or brokers and in creating and maintaining a market for such securities. Municipal bond houses engage chiefly in trading in outstanding municipal issues. They participate with dealer banks and other houses that deal secondarily in municipal issues in creating and maintaining the market for municipal securities of all kinds. They also buy or participate with other houses or with banks in buying new issues of municipal securities directly from the issuers,

<sup>7</sup> See Chapter Seven, "New Security Issues."

usually at public bidding, and distribute those securities among investors. Government bond houses, together with dealer banks, create and maintain the market for government issues. As a general rule, however, they also act as dealers in corporate and other securities. Many stock exchange member firms have over-the-counter trading departments through which they buy and sell bonds and stocks in the over-the-counter market as dealers or brokers. The larger commercial banks usually have government bond and municipal bond departments which act as dealers in those obligations. Under the law, banks may act as dealers only in government and municipal bonds.

**Dealer specialization.** Houses that trade in the over-the-counter market tend to specialize in a particular field. Dealer banks deal only in United States government and municipal issues. Some bond houses specialize in United States government issues and others in municipal issues. A still greater degree of specialization is found among municipal bond houses, some of which confine their activities to the obligations of the larger and more important states and cities, others to the obligations of a single state and of municipal issuers within that state. Within the field of corporate issues, some houses specialize in the securities of banks, trust companies, and insurance companies; some in guaranteed railroad stocks; and others in either railroad bonds, public utility issues, or industrial securities. A number of houses specialize in Canadian and other foreign issues. The investor who wishes to buy or to sell a particular security is not obliged, however, to deal only with a house that specializes in that issue. He may effect the transaction with the house through which he ordinarily does business, which makes the purchase or sale directly with a house specializing in the issue. The house through which he ordinarily deals may trade net or may act as a broker and charge a commission.

*Significance of specialization.* Specialization has resulted in the creation of an open market in which many unlisted securities have gained a degree of marketability as active as that of the average listed security. A house that creates and maintains primary markets for the securities in which it specializes acts as a dealers' dealer. Other dealers and brokers who receive from their customers inquiries or orders to buy or to sell and who know that the house stands ready to buy and to sell that security generally go directly to the specialist house. The specialist house becomes a focal point of buying and selling interest and serves as an intermediary by buying from sellers

and selling to buyers. Unlike the exchanges, which are open during established trading hours (often "ten to three"), over-the-counter dealers make their own hours and are generally willing to trade from 10 A.M. to 4 P.M. and even later. Dealers in United States government securities close trading at 4 P.M. on full days.

**Negotiation.** The terms "power of negotiation" and "negotiation" have special meanings in over-the-counter transactions. Under the "power of negotiation," a person who wishes to sell or to buy a security has the privilege of approaching a dealer directly, or through a broker as agent, a number of houses that deal in the security in an effort to determine the prices at which the houses stand ready to buy or to sell the security. He is not obliged to disclose whether his intention is to buy or to sell. Inasmuch as a number of houses usually make a market in the same issue, trading becomes highly competitive. To attract sellers, a house bids as high as it profitably can and to attract buyers keeps its offering prices as low as it is profitable to do. The individual who wishes to sell, therefore, has the privilege of seeking out the highest available bid for his holdings. By the same token, an individual who wishes to buy has the privilege of seeking the lowest offer. In addition to determining the market prices, the inquirer may ask the size of the market, that is, the number of shares of the stock or the amount of the bonds the house making the market will trade at the prices quoted. The individual obviously proceeds to negotiate with the house making the best bid or offer, as the case may be.

**Quotations.** A house that makes a market in an issue usually "maintains a position" in the security by trading (buying and selling) against its position in the issue. It buys and sells for its own account and risk as principal. Over-the-counter dealers make two kinds of quotations: nominal and firm. A nominal quotation is used to indicate an approximate market for a security when no actual bid and asked prices are available, and is subject to confirmation. A firm quotation, on the other hand, means that the dealer is prepared actually to do business at the quoted prices.<sup>8</sup> It is subject to acceptance within a fixed period of time. A market quotation of "49-51" indicates the range within which the dealer is willing to bargain—that he is willing to pay at least 49 and does not expect to sell for more than 51. To secure an order he is often willing to "close the spread" by bidding  $49\frac{1}{2}$  for a specific number of shares or offering a specific number of shares for  $50\frac{1}{2}$  on a firm

<sup>8</sup> Unless otherwise specified, quotations of bid and offer prices are on a firm basis.

basis. As a rule, competition among dealers keeps prices near a uniform level in every issue and the quotation spread within reasonable limits. Another factor entering into the price is the number of bonds or shares involved. Securities come on the market in varying amounts, ranging from one bond or one share to thousands. The number of bonds or shares involved in the transaction obviously affects the price in the transaction.

Unlike the exchanges, where sales in a particular security are concentrated at one post on the exchange floor and the actual prices at which the security is sold are reported, the over-the-counter market is unable to report all transactions in a security. For this reason the quotations on over-the-counter securities are given in the form of bid and ask prices. The quotations which appear in the daily newspapers are reported by representative dealers and are supplied in most instances by the National Association of Securities Dealers.<sup>9</sup>

**National Quotation Bureau.** To find markets for the many thousands of issues of bonds and stocks traded over-the-counter, the dealer must find the dealers throughout the country who are making a market in, or who are actively interested in buying or selling, the particular issue. This service is provided by the National Quotation Bureau, Inc. (New York), which collects and disseminates quotations daily to its subscribers in all parts of the country.<sup>10</sup> The daily service reports the names of the dealers and the bid and offering prices quoted by the dealers in the bond and stock issues in which they are creating and maintaining markets, or in which they have a buying or selling interest. Obviously, the number of issues listed varies from day to day, depending upon the bids and offerings of the subscribing dealers. The daily service is published in three sections: an Eastern section from the Bureau's main office in New York; a Western section from Chicago; and a Pacific Coast section from San Francisco. A subscriber who wishes to insert a bid or an offer in the daily quotation service makes out a ticket showing the firm's name, telephone number, date, number of shares wanted or offered, and a bid and ask price for at least half of the issues which he stands ready to buy or to sell. These quotations are collected, in New York, about noon by a squad of messengers while out-of-town dealers send in quotations by telephone, telegraph, teletype, or

<sup>9</sup> The *Wall Street Journal*, for example, indicates that the over-the-counter market quotations are "obtained from the National Association of Securities Dealers, Inc., and other sources but are unofficial. Origin of any quotation will be furnished on request."

<sup>10</sup> Dealer subscribers to this service must meet stringent requirements.

air mail. Between 2 P.M. and 5 P.M. the quotations are sorted alphabetically according to issue, stenciled, and printed. Daily quotation issues may average 120 pages and contain 3,100 bond issues and 4,100 stock issues, or a total of 7,200 issues. By 6 P.M. the issue has been printed, placed in pre-addressed envelopes, and shipped to the various financial centers for distribution. The following morning subscriber dealers throughout the country have the quotations ready to serve their customers. By means of this service the dealer having an order to buy or to sell a particular security learns the names of the houses reported as making a market or having a buying or selling interest in that security, and the bid and offering prices which they are quoting. There is no assurance that the prices quoted the previous day still prevail in the face of overnight economic, financial, or political developments, but the dealer with the order at least knows with whom to open negotiations.

**Federal supervision.** The over-the-counter market is also subject to the supervision of the Securities and Exchange Commission. Under the Securities Exchange Act of 1934, dealers or brokers may not lawfully do business in the over-the-counter market unless registered with the Commission. Exemption from this requirement is extended to dealers and brokers whose business is exclusively intrastate or who deal only in exempt securities (United States Government and municipal securities), commercial paper, bankers' acceptances, or commercial bills. Registration of dealers has two purposes: (a) to bring dealers and brokers within the control and supervision of the law and of the Commission, and (b) to facilitate legal proceedings. Registration is effected by filing a broker-dealer registration statement with the Commission. The registration statement becomes effective thirty days after filing unless the Commission denies registration. Registration of a dealer, however, does not mean that the Commission has in any way passed upon the business of the dealer.<sup>11</sup> Any false, fraudulent, or misleading statement, or any misrepresentation, constitutes ground for suspension or revocation of registration.

The problem of supervision of over-the-counter brokers and dealers is reflected to some extent in the fact that approximately 4,000 such brokers and dealers are registered with the Commission.

*National Association of Securities Dealers.* Regulation of the over-the-counter market by the Commission is effected through the National Association of Securities Dealers. This Association was

<sup>11</sup> Securities and Exchange Commission, Rule X-15C1-3.

organized under authority of the Maloney Act of 1938. The Maloney Act amended the Securities Exchange Act of 1934 by adding a separate section (Section 15A) which permits associations of brokers or dealers to register with the Commission as national securities associations or as affiliated securities associations under required terms. While an association as such is not required to register with the Commission, registration is necessary if the association wants to exercise over its members an effective regulation of the scope provided for in the Act. The registration of the National Association of Securities Dealers, Inc., became effective August 7, 1939. It is a non-profit membership corporation supported by dues, assessments, and other charges paid by the members.<sup>12</sup> A unique provision of the Maloney Act is that members of the association, when registered with and approved by the Commission, may do business with each other on preferential terms which may not be extended to non-members. Since non-members may not enjoy the customary price concessions from wholesalers to retailers, practically all of the more active dealers and brokers in corporate securities are members.

Any broker or dealer engaged in the over-the-counter business is eligible for membership provided only that he has never been expelled from a national securities exchange or a national securities association. Rules of fair practice adopted by the membership are filed with the Commission. The Association has adopted the rules of the Commission governing transactions in the over-the-counter market and, in addition, other rules of fair practice not covered by the rules and regulations of the Commission. The self-disciplinary actions of the Association are subject to review by the Commission. The predominant position of the Association in regulating the over-the-counter trading is strengthened by the fact that its members account for over 90 per cent of the volume of trading in over-the-counter securities.

**Listed v. over-the-counter securities.** Listing has much more significance in the case of stocks than of bonds. Approximately twice as many stock issues as bond issues are registered on national exchanges. Stocks are bought and sold primarily through the exchanges; bonds are usually bought and sold over-the-counter.

*Listed securities.* The chief advantage of listed securities as a class is the marketability which such securities enjoy. This quality arises from three factors. One, an exchange provides a market place

<sup>12</sup> Dealers in tax-exempt securities are not required to join.

where buyers and sellers meet. The full force of demand and supply on a national and even on an international scale finds a central point of concentration on the exchange floor. It is estimated that about 85 per cent of the trading on the New York Stock Exchange arises from out-of-town sources. Here the value of a security is best-known and, as a result, the most favorable price is obtainable. Two, the continuous market in the security and the instantaneous reporting of transactions provide the investor with the latest information on the market appraisal of the value of the security.<sup>13</sup> Three, the collateral value of the security is enhanced by the fact that it is listed. Banks are chiefly concerned with the relative convenience with which the collateral pledge as security for a loan may be converted into cash in the event the loan is not paid.

*Over-the-counter securities.* On the other hand, the suitability of an issue to trading either on an exchange or over-the-counter is determined largely by the nature of the security. Some securities have certain features or qualifications that make them especially adaptable to trading in the over-the-counter market. Among those features or qualifications are: eligibility for purchase by banks and insurance companies; limited distribution of the issue; the absence of a speculative interest; a continuously high price for the issue; and a small capitalization of the issuer. Institutional investors such as banks and insurance companies usually buy and sell securities in large blocks. These investors find it necessary to make the purchase or sale quickly, in a single transaction and at a predetermined price. They desire to avoid a public record of large purchases or sales of bonds because of the adverse effect such a transaction may have on the market price of such issues, especially since the purpose of the transaction may be simply to improve the diversification of the portfolio or to shift from lower to higher yielding bonds. Furthermore, since a large buying order on the Exchange at a limited price must give precedence to all orders having priority at that price, the institutional order would experience difficulty in completion at the limited price. The over-the-counter dealer is in a better position to provide this service than the stock exchange broker. He stands ready in some instances to buy the entire block for his own account at a definite price. He expects to resell the block to his own cus-

<sup>13</sup> One hundred forty-eight stocks traded on the New York Stock Exchange and 22 stocks traded on the New York Curb Exchange are also traded on the San Francisco Stock Exchange between the hours of 10 A.M. and 5 : 30 P.M. (Eastern Standard Time).

tomers and to other dealers who have orders for the security on their books. Sometimes the dealer succeeds in placing the entire block with another bank or insurance company.

*Inactive securities.* An inactive security is one in which transactions happen infrequently. Such securities are usually characterized by limited distribution, the absence of speculative interest, a high price, or a small capitalization. A continuous flow of buying and selling orders is generally absent in an issue that (a) is distributed among a limited number of holders, (b) is attractive to investment rather than speculative buyers, (c) sells at such a high price as to limit the number of prospective buyers, or (d) is outstanding in a small amount. In a security that is held by a limited number of investors, there is little likelihood that at any one time an appreciable percentage of them will wish to sell or that public interest will spontaneously generate a large number of buying orders. Many high-grade securities, such as some guaranteed railroad stocks and some bank and insurance company stocks, are held primarily for investment, that is, for regular income rather than for speculative profit through appreciation in price. A high price for a security diminishes speculative interest and trading activity. A greater volume of trading occurs in transactions of 100 shares at \$50 a share than in transactions of ten shares at \$500 a share. Dealers provide a ready market for inactive issues offered for sale by buying them for their own account and risk and by finding buyers for them.

**Delisting v. unlisted trading privilege.** In recent years two controversies have developed between exchange members and over-the-counter dealers involving the delisting of securities listed on exchanges and the admission of securities to unlisted trading privileges by the exchanges. The delisting of securities has been opposed by exchange members while over-the-counter dealers have objected to the granting of unlisted trading privileges by the exchanges.

*Delisting.* Under the Securities Exchange Act of 1934, a security registered with a national securities exchange may be withdrawn or stricken from listing and registration in accordance with the rules of the exchange upon application either by the issuer or by the exchange to the Commission and "upon terms as the Commission may deem necessary to impose for the protection of investors." In view of the fact that the rules of the Commission do not specifically require delisting petitions to be approved by the stockholders, the Commission automatically granted the request of the Fuller Manufacturing Company to delist its securities from the Chicago Stock



Exchange and of the American Box Board Company to delist from the New York Curb Exchange. The delisting of the former's stock was resisted by the Chicago Stock Exchange, which shortly thereafter adopted a rule which, in brief, provided that a security would not be withdrawn on the request of the issuer unless the action was approved by 66⅔ per cent of the amount of the outstanding security, and then only provided less than 10 per cent of the number of bona fide individual stockholders did not object. The issue was more clearly stated in the action of the Boston Stock Exchange in opposing the delisting of the common stock of the Shawmut Association. The Boston Stock Exchange called upon the Commission to curb "a trend toward delisting" of securities on exchanges, contending that half of the delistings between 1936 and 1943 happened in 1943 and that "the time may shortly be at hand when there will be no regional exchanges and even the 'Big Board' may feel the pinch." The Association, on the other hand, held that the stock would have a better market over-the-counter if it were removed from the Exchange and that the market value would be brought closer to the asset value through such removal. The Commission, in its decision, held that since the Shawmut Association had complied with the rules of the Boston Stock Exchange in its application for withdrawal, the sole function of the Commission under the Securities Exchange Act of 1934 was to decide the terms necessary for the protection of the investors. The application was granted on condition that within 120 days from the date of the order, consent to the delisting be obtained from the holders of record of a majority of the 390,000 shares outstanding and from a majority of the holders of such shares as well.

*Unlisted trading privilege.* At the same time the National Association of Securities Dealers protested the Commission's order, granting the application of the New York Curb Exchange to extend unlisted trading privileges to Kentucky Utilities Company first mortgage 4's of 1970. The Association challenged the Commission's definition of the "vicinity" of the New York Curb Exchange as embracing Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and Ohio, and contended that the vicinity of the New York Curb Exchange should be limited to New York City, or to one hour's commuting distance of New York, or a territory inclosed by lines midway between New York and Philadelphia and New York and Boston. The Third United States Circuit Court of Appeals ruled, however, that the Commission had the

power to define what constitutes the vicinity of the Curb Exchange on "sound reasoning" based upon the trading activity and general distribution of a security and with consideration for protection of the public.

The first application under Section 12 (f) of the Securities Exchange Act of 1934 involving common stocks arose when the New York Curb Exchange applied to the Commission to extend unlisted trading privileges to six common stocks. None of those stocks was then listed or registered on any exchange, and none of the issuers had any other security so listed and registered. The applications were opposed by the National Association of Securities Dealers and by all but one of the companies. The Commission denied the applications for each stock except one, which was approved conditionally. In its decision, the Commission pointed out that under the Act it could not grant the applications without imposing conditions subjecting the issuers (and their officers, directors, and holders of 10 per cent or more of the stock) to duties and obligations "substantially equivalent" to those that applied to listed and registered securities. Since the application for trading privileges was not a voluntary act of the issuers, the Commission said the power to impose the regulatory conditions "must be exercised with caution." Analysis of the five companies and their officers showed that "to impose conditions rendering these securities subject to the Act would be in effect to thrust registration upon them." The Commission found in one of the companies, a registered holding company under the Public Utility Holding Company Act of 1935, that its officers, its directors, and 10 per cent of its stockholders were currently subject to the "substantially equivalent" requirements, except the prohibition against short selling. In granting the application, the Commission stipulated that the statutory prohibitions against short selling be applied.

**Credit transactions.** A security may be purchased either outright for cash or on margin. In an outright purchase the buyer pays the full price for the security in cash. In a purchase on margin, however, the buyer pays only part of the purchase price in cash and borrows the balance from the broker. Under the Securities Exchange Act of 1934 the amount of credit that may be extended by brokers and dealers on listed securities for the purchasing and carrying of securities is subject to the rules and regulations of the Board of Governors of the Federal Reserve System. The Federal Reserve authorities are instructed by the law to keep themselves informed

as to "whether undue use is being made of bank credit for the speculative carrying of or trading in securities, real estate, or commodities," and are authorized to take certain actions to prevent undue use of credit in those fields.

*Regulation T.* Regulation T of the Board applies to extensions of credit by brokers and dealers on listed securities, and Regulation U applies to loans on stocks by banks. Regulation T limits the amount of credit that may be extended on a registered security in a general account by prescribing a maximum loan value, which is stated as a specific percentage of the market price of the security at the time of the extension of credit. The Board has changed the minimum margin requirement and hence the maximum loan value from time to time. The margin requirement was lowered from 55 per cent to 40 per cent and the maximum loan value increased from 45 per cent to 60 per cent on November 1, 1937. Effective February 5, 1945, however, the margin requirement was increased to 50 per cent and the loan value reduced to 50 per cent. The minimum margin requirement was raised again on July 5, 1945, to 75 per cent and the maximum loan value lowered to 25 per cent. The "margin requirement," or the minimum cash payment by the buyer, is therefore expressed as the difference between the market price of the security (100 per cent) and the maximum loan value. The requirement effective July 5, 1945, called for a cash payment of at least 75 per cent of the cost price. The margin requirement was raised to 100 per cent on January 21, 1946, which meant that, by requiring full cash payment for securities, margin buying as such was eliminated. In announcing this change the Chairman of the Board of Governors of the Federal Reserve System said:

By this action, the board has used its authority to prevent the further flow of borrowed money into stock market operations. There is no further recourse left to the board, so far as restraining speculative activities in listed stocks is concerned, except possibly to order that all existing margin accounts be put on a cash basis and to make some of the administrative provisions applying to banks more rigid.

Regulation T, as a means of controlling the use of credit in the securities market, applies only to the minimum margin required at the time of the purchase of listed securities. It does not prescribe the action of the broker in the event of a decline in the market price of the stock purchased on margin. Subsequent carrying margins are subject to stock exchange control.

*Significance of Regulation T.* One purpose of government control of margin trading was to make security prices more stable by re-

quiring such high initial margins that minor reactions in prices would not create distress selling. To have required traders to maintain such high initial margins at all times would have defeated the primary purpose of the regulation. A decline in market quotations acts only to curtail the purchasing abilities of margin traders, since the Board regulation prohibits the execution of an order that would cause a trader's debit balance to be greater than the specified percentage of his collateral. Such a decline in market price would not result in distress selling unless and until margins had shrunk to the minimum set by the New York Stock Exchange or by an individual broker.<sup>14</sup>

**Security price manipulation.** The Securities Exchange Act of 1934 prohibits the manipulation of security prices, the dissemination of false or misleading information, and the unfair use of "inside information." Increased activity in an issue accompanied by rising prices usually arouses the interest of the speculative public. Manipulators, aware of this psychology, seek to create artificial activity either by executing a series of deceptive transactions or by disseminating false information designed to cause the speculating public to augment supply or demand. The Act prohibits the creation of a false or misleading appearance of active trading in any security by either (a) effecting a transaction in a security which involves no change in the beneficial ownership of the security or (b) entering an order for the purchase or sale of a security with the knowledge that at the same time an order of the same size and at the same price for the sale or purchase of the security has been or will be entered by or for the same or different parties.

*Matched orders and wash sales.* The two types of deceptive transactions used to stimulate trading activity are "matched orders" and "wash sales." "Matched orders" are concurrent orders placed by the manipulator. One order is placed through one broker to buy a given number of shares of the stock at a price above the market, and the other order is placed through another broker to sell the same number of shares of the same stock at the same price. The transactions are purely fictitious; nevertheless they imply market activity in the stock, keep the stock on the ticker and the financial page, and make it appear in a strong position because of its activity and the advance in price. The purpose is to deceive buyers, who may become sufficiently interested to take the stock off the manipulator's hands at an artificially high price. The brokers executing the

<sup>14</sup> See Chapter Five for a discussion of margin operations.

orders are not necessarily involved in the manipulation. The "wash sale" is also a fictitious transaction with the collusion of brokers who agree among themselves to create an artificial price for the stock by means of identical buying and selling transactions. The seller never expects to hold the buyer for payment nor does the buyer expect to receive any stock.

*False information.* The Securities Exchange Act of 1934 also prohibits the dissemination of false or misleading information with respect to market prices or values. It is unlawful for any dealer, broker, or other person to induce the purchase or sale of any security by the "circulation or dissemination in the ordinary course of business of information to the effect that the price of any such security will or is likely to rise or fall because of market operations of any one or more persons conducted for the purpose of raising or depressing the prices of such security," or by making any statement "which was at the time and in the light of the circumstances under which it was made false or misleading with respect to any material fact, and which he knew or had reasonable ground to believe was so false or misleading." Rule X-10B-5 of the Commission provides in part that it is unlawful for any person, directly or indirectly "to engage in any act, practice, or course of business which operates or would operate as a fraud or deceit upon any person, in connection with the purchase or sale of any security."

The determination of the New York Stock Exchange to prevent the dissemination of false or misleading information was expressed in the following letter to members of the Exchange:

The principle expressed in the Exchange's own rules, as well as in the securities laws, are opposed to the use of manipulative, deceptive or other fraudulent devices for the purpose of influencing unfairly the market price of any security. . . . The preventive is ceaseless vigilance. This means that there must be the most careful scrutiny and supervision of orders flowing through the offices of our members and member firms. It means that unsubstantiated reports of any character must not be repeated by those who represent our firms in their relations with the public. It means use of the greatest discretion in the literature issued by our firms to the public. It means that the well-established principle of truthful disclosure of facts, as the basis upon which security values should be judged must always be kept in mind as the essence of Exchange policy.

*Inside Information.* To control the use of "inside information" the Securities Exchange Act of 1934 requires every person who is directly or indirectly the beneficial owner of more than 10 per cent of any class of stock that is registered on an exchange, or who is an officer or director of the issuer, to file a statement of his holdings of such securities and to keep it up to date by filing monthly state-

ments showing any change in his holdings. The Act also provides that any profit realized by such persons from any purchase and sale, or any sale and repurchase within any period of less than six months "unless such security was acquired in good faith in connection with a debt previously contracted," shall inure to and be recoverable by the issuer "irrespective of any intention on the part of such beneficial owner, director, or officer in entering into such transaction of holding the security purchased or of not repurchasing the security sold for a period exceeding six months." Suit to recover such profit may be instituted by the issuer or by the owner of any security of the issuer in the name of and in behalf of the issuer if the issuer fails or refuses to bring suit within sixty days after the request or fails diligently to prosecute the suit. In no instance, however, may the suit be brought more than two years after the date on which the profit was realized.

**Commission rules.** In accordance with the power granted under the Securities Exchange Act of 1934 to define by rules and regulations "such devices or contrivances as are manipulative, deceptive, or otherwise fraudulent," the Commission has adopted several pertinent rules. Before the completion of an over-the-counter transaction, the dealer or broker must (a) send to the customer a confirmation disclosing whether the firm is acting as a principal or as an agent; (b) disclose or agree to disclose the name of the person on the other side of the transaction, if the firm is acting as an agent; (c) state the source and amount of commission. If the broker-dealer is in a relationship of "control" with the issuer, he must reveal the existence of such relationship to the customer before effecting any transaction in the issue. A broker who is financially interested in the primary or secondary distribution of an issue, or a dealer who has such an interest and who at the same time is receiving a fee from a customer for giving investment counsel, is required to give written notice to the customer of the existence of the interest before completing the transaction. A broker or dealer engaging in the distribution of securities traded over-the-counter is restricted in his offerings "at the market." He is prohibited from representing that the security is being offered "at the market" or at a price related to the market price, unless he has a reasonable basis for believing that a market for the security exists other than that which is made, created, or controlled by him or by associated interests.

**Commission enforcement.** In enforcing the provisions of the Securities Exchange Act of 1934 outlawing manipulative practices, the

policy of the Commission has been based upon the principle that it is more in the public interest to prevent than to punish fraud. The Commission obtains information about manipulation from many sources: (a) complaints received from the public; (b) reports of security transactions which are filed by officers, directors, and principal stockholders under the provisions of Section 16; (c) Commission studies of all secondary distributions, based upon information voluntarily furnished by certain members of the exchange; (d) stock tickers, which are maintained at both the Philadelphia office and at the New York regional office and which are watched by tape readers; (e) systematic observation by the Commission of the market behavior of all securities on all national securities exchanges, and the interpretation of the price and volume movement of all securities on the basis of all factual information that can be obtained. The Commission maintains at the Philadelphia office a trained staff of specialists with practical experience in trading, as well as economists and technicians, whose sole responsibility it is to observe systematically by broad industrial categories the movements in both price and volume of all securities and to develop from such studies probable cases of manipulation.

*Commission procedure.* The Commission reviews and interprets all complaints and reports of suspicious market movements as well as the Commission's own first-hand information.<sup>15</sup> In some instances a preliminary review convinces the Commission that there has been no violation of the anti-manipulation provisions of the Act. In other instances a "flying quiz" is made to supply any essential missing facts by interviewing exchange officials, members, and other brokers and dealers. The case is again reviewed and, if no violation appears to have occurred, it is closed. On the other hand, if the "flying quiz" confirms the Commission's original suspicion of manipulation, a preliminary trading investigation is undertaken. This may be followed by a formal trading investigation that may require individual customers and other persons to supply such additional information as may be necessary to complete the case.

<sup>15</sup> The Commission frequently requests members of the Exchange to report in detail on round-lot trading in listed stocks for their own account and for the account of others. Such a request was made in September, 1944, in connection with trading in low-priced motor stocks, and again in October when the market showed a downward tendency. Under a New York Stock Exchange ruling effective in November, 1944, all members and member firms are required to submit weekly reports on round-lot transactions in listed stocks initiated on the Exchange floor for their own account or for an account in which they have a direct or indirect interest.

## Review Questions

1. Name the two markets on which securities may be traded.
2. Distinguish between a broker and an over-the-counter dealer.
3. Discuss the function of a securities exchange.
4. Name and describe two groups of securities traded on a securities exchange.
5. Discuss the New York Stock Exchange listing requirements.
6. What is meant by "unlisted trading privilege"?
7. Describe the organization of the New York Stock Exchange.
8. Name four classes into which members of the New York Stock Exchange may be divided.
9. Discuss the significance of the Securities Exchange Act of 1934.
10. What is meant by a "registered" exchange? An "exempt exchange"?
11. What is meant by a "registered" security?
12. Discuss the problem of regulating the over-the-counter market.
13. Discuss the function of the National Association of Securities Dealers.
14. Name two bases upon which securities may be purchased.
15. Discuss the significance of Regulation T of the Board of Governors of the Federal Reserve System.
16. Explain the relation of Regulation T to the initial and to the subsequent margin.
17. Distinguish between "matched orders" and "wash sales."
18. Explain the control of the use of "inside information" under the Securities Exchange Act of 1934.
19. Name the sources through which the S.E.C. obtains information on manipulation.
20. Compare listed and over-the-counter securities from the standpoint of marketability.
21. Is listing more significant in the instance of bonds or of stocks? Why?
22. Discuss three factors underlying the marketability of listed securities.
23. Name and discuss the relative importance of the securities commonly traded over-the-counter.
24. Describe the functions of an over-the-counter security dealer.
25. Distinguish between nominal and firm quotations.
26. Describe the method of reporting over-the-counter security quotations.
27. Why have the exchanges opposed the delisting of securities?
28. Why have the over-the-counter security dealers opposed the granting of unlisted trading privileges?
29. Discuss the powers of the S.E.C. over the delisting of securities.
30. Discuss the relation of the definition of the "vicinity" of an exchange to the admission of securities by an exchange to unlisted trading privileges.

## Assignments

- (a) Indicate whether the following securities are traded on an exchange or over-the-counter: United States Treasury 2 $\frac{3}{4}$ 's of 1960-65; New York Central Railroad 4's of 1998; Texas Corporation 3's of 1965; New York State 3 $\frac{1}{2}$ 's of 1970; Government of Puerto Rico 4 $\frac{1}{2}$ 's of 1953-59; International Harvester pre-



- ferred; Electric Bond & Share \$5 preferred; Pittsburgh, Fort Wayne & Chicago preferred; General Motors common, Aluminum Company of America common; Chase National Bank common; Guaranty Trust Company common; Connecticut General Life Insurance Company common.
- (b) Indicate the specific markets on which the following stocks are traded: Consolidated Edison Company (New York) common, Seiberling Rubber Company common; A. G. Spalding & Bros. 5 per cent debentures and common.
  - (c) Indicate the minimum initial margin required on 100 shares of a listed stock purchased on margin at  $85\frac{7}{8}$  under the margin requirements effective (1) February 5, 1945, (2) July 5, 1945, and (3) January 21, 1946
  - (d) Indicate the status (listed or unlisted) of the following stocks on the New York Curb Exchange: Aluminum Company of America, American Cyanamid, Humble Oil, and Midvale.

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## CHAPTER FIVE

# SECURITY MARKET OPERATION

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**Introduction.** Security transactions on the New York Stock Exchange are conducted through members of the Exchange who act as brokers and who receive a commission as compensation for their services. The seller sells through a broker, to whom he pays a commission, and the buyer buys through a broker, to whom he pays a commission. Thus two commissions are involved in every transaction. Minimum commission rates are established by the Exchange, but each brokerage house is free to charge higher rates if it elects. Competition between brokerage houses, however, tends to keep rates on a uniform basis at the established minimum.<sup>1</sup>

**Price quotations.**<sup>2</sup> Price quotations on the market are in terms of the established unit of trading, which is \$1,000 principal amount for a bond and 100 shares for stocks. Bond prices are expressed as a percentage of the principal amount; stock prices are stated directly in dollars per share. A bid of 85 for a bond is an offer to pay \$850 for a \$1,000 principal amount of bond, and an asked price of 85 for a bond is an offer to sell a \$1,000 principal amount of bond for \$850.<sup>3</sup> Similarly, a bid of 45 for a stock is an offer to buy 100 shares of the stock at \$45 a share, and an asked price of 45 for a stock is an offer to sell 100 shares of the stock at \$45 a share.

Orders that exceed the established unit of trading or involve a security selling at a relatively high price frequently cannot be filled at the prevailing quotation. For example, an order to buy \$5,000 principal value of a bond issue which is quoted 92-94 may have to be executed on a basis of \$2,000 at 94, \$2,000 at  $94\frac{1}{4}$ , and \$1,000 at  $94\frac{1}{2}$ . Similarly, an order to buy 500 shares of a stock which is

<sup>1</sup> See Chapter Six for a schedule of minimum commission rates.

<sup>2</sup> See Appendix B, "Reading the Financial Page."

<sup>3</sup> Quotations on partially redeemed bonds listed on the New York Stock Exchange are in terms of actual dollar value instead of a percentage of the principal or remaining principal value.

quoted 46-46 $\frac{1}{2}$  may be filled on a basis of 100 shares at 46 $\frac{1}{2}$ , 200 shares at 46 $\frac{5}{8}$ , 100 shares at 46 $\frac{3}{4}$ , and 100 shares at 46 $\frac{7}{8}$ . To cite a concrete example, a broker received a market order to buy 500 shares of a well-known industrial stock. He was able to buy 100 shares at 43 $\frac{1}{2}$ , 100 shares at the next offering price of 44 $\frac{1}{4}$ , and 100 shares at 44 $\frac{3}{4}$ . The next offering price was at 46. On the other hand, an order to sell \$5,000 principal value of a bond issue quoted at 92-94 may be filled on a basis of \$2,000 at 92, \$2,000 at 91 $\frac{1}{2}$ , and \$1,000 at 91 $\frac{1}{4}$ . In like manner, an order to sell 500 shares of a stock quoted at 46-46 $\frac{1}{2}$  may be executed on the basis of 100 shares at 46, 200 shares at 45 $\frac{7}{8}$ , 100 shares at 45 $\frac{3}{4}$ , and 100 shares at 45 $\frac{5}{8}$ .

By the same token, stocks selling at relatively high prices are frequently inactive, and offers to buy may be difficult to fill. For example, on a recent date, there were twenty or more common stocks on the New York Stock Exchange selling at 100 or above. The highest priced issue was Coca-Cola International, which had not sold in more than two years and which had been quoted for more than six months at 820 bid, with none offered. A month later the quotation was changed to 1,000 bid, which was 530 points above the previous sale two years earlier at 470.<sup>4</sup> A sale of Cleveland, Cincinnati, Chicago & St. Louis Railroad common stock took place early in April of a recent year at 155. Two weeks later the tape advertised the offer of a buyer to purchase ten shares of the stock for "cash" at 165, but this did not bring out any stock. In May the same buyer bid 166 for "cash" without success, and in June the stock was quoted 170 bid, none offered.

**Market and limit orders.** The order that an investor may give to his broker to buy or to sell a security may be either a "market" order or a "limit" order. An order "at the market" instructs the broker as soon as he can reasonably transmit the order to his representative on the floor of the exchange to execute the order at once at the best price then quoted at the post. On a quotation at the post of 45 bid, 46 asked, a buy order would be executed at 46 and a sell order at 45. In a market order, the investor places no price limitation on the order but does place upon the broker the responsibility of executing the order at the best price available in the market at the time.<sup>5</sup> By "best price available" is meant the lowest price

<sup>4</sup> Other instances of extremely high prices of stocks are Texas Land Trust, which in 1926 sold from a low of \$510 to a high of \$2,040, and Michigan Central, which in 1928 sold at \$1,600.

<sup>5</sup> A customer may also give the broker a discretionary order, i.e., an order to be executed at a price which is left to the discretion of the broker.

for a buy order and the highest price for a sell order. The market order has the advantage of immediate execution but, on the other hand, the best price at the time may not be entirely satisfactory.

In a "limit" order the investor places a price limitation by which the broker is bound. An order to buy at 52 means that the maximum price which the investor is willing to pay for the security is 52. The broker in executing the order may not pay more than 52 and, if possible, should pay less.<sup>6</sup> An order to sell at 52, on the other hand, means that 52 is the minimum price for which the investor is willing to sell. The broker may not sell for less than 52, and, if possible, should sell for more. The broker, therefore, will not buy until the price goes down to the specified figure or sell until the price goes up to the specified figure. A limit order has the advantage of execution only at the price set by the investor, but market quotations away from the stipulated price may cause delay or failure in completing the order. In general, market orders are probably more satisfactory for securities with good marketability as evidenced by a narrow spread between bid and asked prices, whereas limit orders are more advisable in securities of limited marketability and hence with a wide spread between bid and asked prices. Similarly, a market order to buy in a rising market or to sell in a declining market is preferable to a limit order.

**Day and open orders.** A limit order may be either a "day" or "open" order. A day order is good only for the day on which it is received; and if not executed on that day, it is automatically cancelled. An open order, on the other hand, remains effective until it is either executed or cancelled. Such orders are known as "G.T.C." — "good till cancelled." Open orders may also be limited to a specified period, such as "good for the week" or "good for the month." All limit orders, however, are considered day orders unless otherwise stated.

The open order is useful to the investor who has decided upon a definite price at which he is willing to buy or sell the security and who is willing to wait until the market reaches that price. An open order to buy at a price substantially below the current market presents the possibility, however, of being filled after a considerable interval and at a time when the security may be either no longer attractive or continuing to decline to lower levels. It is the practice of some brokerage houses to mail a confirmation to the customer

<sup>6</sup> Buying orders are automatically reduced the amount of the dividend when the stock goes ex-dividend.

each Friday of the orders "in open." If, at the end of three months, the order has not been executed or cancelled, the customer is requested to return a signed confirmation if he wishes the order to remain open.

**Odd-lot orders.** The established unit of trading in a great majority of the stocks on the New York Stock Exchange is 100 shares. The only exception is a special group of stocks in which activity is limited by one factor or another and that are traded in units of ten shares at the inactive post (Post 30). An order for the purchase or sale of less than the established unit of trading is considered an odd-lot order. A broker who receives an odd-lot order does not execute the order directly but places it with an odd-lot brokerage firm which stands ready to buy or sell lots of one to ninety-nine shares. An odd-lot brokerage firm that handles odd-lot orders on the floor of the New York Stock Exchange is known as an odd-lot dealer. The odd-lot dealer fills odd-lot buy orders in a stock either from odd-lot sell orders in the stock which he may have on his books or from his round-lot purchases of the stock. In like manner, he fills odd-lot sell orders in a stock either from odd-lot buy orders on his books or by selling round lots in the market. From the standpoint of the odd-lot dealer, the most desirable situation is one in which, for example, the accumulated orders to buy at a given price match exactly the accumulated orders to sell at the market. Usually, however, he has a balance either to be bought or to be sold. If the balance aggregates an even 100 shares, he will buy it or sell it, as the case requires, in the round-lot market. On the other hand, if, as is usually the case, the balance is not divisible by 100, he either buys more shares than he needs in order to fill odd-lot buy orders or sells more than he has in order to fill odd-lot sell orders. While in the latter instance he runs some risk of a sudden change in the market, the brevity of the interval reduces the risk to a minimum.

**Market order.** A market order for an odd-lot transaction is executed at the odd-lot differential of one eighth of a point.<sup>7</sup> For

<sup>7</sup> Effective September 1, 1942, the New York Stock Exchange reduced the unit of trading in sixteen comparatively inactive and high-priced stocks from 100 shares to 10 shares and moved twelve stocks formerly traded at Post 30 (the inactive post) to active posts, with the latter group's trading unit remaining at 10 shares. Specialists and odd-lot dealers at the inactive post service the entire twenty-eight stocks involved as the 100-share unit stocks are now serviced, with the main exception that the differentials charged by odd-lot dealers on lots smaller than 10 shares are 25 cents a share when they sell under \$75 and 50 cents a share when they sell at \$75 or over. At the same time, the odd-lot dealers at Post 30 announced that differentials charged on odd-lots of stocks dealt in at that post were changed to correspond with differentials charged after September 1, 1942, on odd-lots of 10-share unit stocks dealt in at the other posts.

example, a market order to sell an odd-lot is executed at one eighth less than the market price of the next round-lot transaction. If the next round-lot sale is at 25, the price to the seller of an odd-lot is  $24\frac{7}{8}$ . Similarly, a market order to buy an odd-lot is executed at one eighth more than the market price of the next round-lot transaction. If the next round-lot sale is at 25, the price to the buyer of an odd-lot is  $25\frac{1}{8}$ . The odd-lot differential is not in lieu of a brokerage commission but is an additional charge.<sup>8</sup>

*Limit order.* A limit order for an odd-lot transaction is not executed until the prevailing market price reaches the one-eighth differential. For example, an odd-lot order to sell at 35 is not filled until the market price reaches  $35\frac{1}{8}$ . Then the odd-lot broker buys for his own account the shares that the odd-lot customer ordered his broker to sell. In like manner, an odd-lot order to buy at 35 is not filled until the market price reaches  $34\frac{7}{8}$ . Then the odd-lot dealer sells to the commission broker's customer the shares he has ordered. The odd-lot dealer, therefore, buys from odd-lot customers orders that can be sold at higher prices on the round-lot market and sells odd-lot customers shares which can be bought at lower prices in full lots. The profit to the odd-lot dealer is the one eighth of a point differential.

*Significance.* Odd-lot trading enables the small trader with restricted capital to make a limited investment in each of several stocks and thus to obtain greater diversification than would be possible if he were obliged to buy only in round-lots. On the other hand, the odd-lot differential increases the cost to him of the purchase of a stock, and decreases the net proceeds to him from the sale of a stock. Odd-lot trading also encourages speculation by those least prepared to assume the risks attendant upon speculation.

**Delivery.** A security may be sold on the Exchange on a cash, regular, or delayed delivery basis.<sup>9</sup> A cash delivery transaction is

<sup>8</sup> Since January 1, 1938, all odd-lot dealers on the New York Stock Exchange have been required to charge, in addition to the round-lot differential, an amount sufficient to cover the state and federal transfer taxes. While for several years the three large odd-lot houses and three smaller specialist and odd-lot houses had passed on this tax to the odd-lot buyer, two other houses had absorbed it. The effect of this ruling was to place all odd-lot brokers, including those who handle only odd-lots in the stocks in which they are all specialists, on an equal basis.

<sup>9</sup> In the over-the-counter market, trading for the most part is conducted according to unwritten rules based upon accepted custom and usage, which have come to be regarded as standard practice governing transactions. In general and insofar as they can be adapted to over-the-counter trading, the rules of the New York Stock Exchange pertaining to the mutual relations of its members serve as a pattern.

one in which delivery is made and payment received on the same day as the purchase or sale. It must be specified as a cash sale, however, at the time of offer and acceptance. A security sold for regular delivery must be delivered by 12 : 30 P.M. on the third full business day following the date of sale. The dates of delivery "regular way" are as follows:

<i>Date of Sale</i>	<i>Date of Delivery</i>
Monday . . . . .	Thursday
Tuesday . . . . .	Friday
Wednesday . . . . .	Monday
Thursday . . . . .	Tuesday
Friday . . . . .	Wednesday
Saturday . . . . .	Wednesday

Sales made on Thursday and Friday are deliverable on Tuesday and Wednesday, respectively, since Saturday is not a full business day. Should a holiday fall on a normally full business day, delivery is delayed one day. If, in the instance of a sale on Monday, the next day, Tuesday, is a holiday, delivery is not made until Friday. Unless otherwise specified, delivery regular way is implied in every transaction.

*Delayed delivery.* A security sold on a delayed delivery basis is deliverable on or before the date specified in the sale. For example, a seller may not be prepared to make delivery in the regular way and sells the stock on a delayed delivery basis — "seller's option 7." The buyer agrees to allow the seller the option of making delivery within seven days.<sup>10</sup> In the sale of stock, the option may run for not less than three days and for not more than sixty days. In a bond sale, the delayed delivery is indicated by "S7F," meaning that the seller has the option of making delivery within seven days but the interest accrues only up to but not including the day of regular delivery — after that the bond is "flat" so far as accrued interest is concerned.<sup>11</sup> On all contracts involving more than three days, written contracts must be exchanged not later than the day following the transaction. One day's notice is usually given before the securities are delivered, the seller giving notice by 4 P.M. on the day previous to his delivery of the security. The use of a delayed delivery option is restricted to actual owners of securities. Short sellers are not permitted to use the delayed delivery option.<sup>12</sup>

<sup>10</sup>In early 1945 the "regular" sales of Canadian Pacific common were accompanied by a large volume of "seller 30" sales which ranged from  $\frac{1}{8}$  to  $\frac{1}{4}$  under "regular" prices. Such delayed sales are always at a discount from the regular sales.

<sup>11</sup>See Chapter Six for a discussion of accrued interest.

<sup>12</sup>See page 88 for a discussion of short selling.

**Negotiability.** Under the Personal Property Law of New York (Section 183) delivery is defined as the "voluntary transfer of possession from one person to another." Bonds and stocks are negotiable and may be transferred either by endorsement and delivery or by simple delivery. A stock certificate as an instrument does not possess the qualifications of negotiability; nevertheless it has been made negotiable under a uniform stock transfer law approved by the Commissioners on Uniform State Laws in 1909 and adopted by many of the States. New York enacted a Uniform Stock Transfer law in 1913 and New Jersey in 1916. Title to a registered bond and to a stock is transferred by endorsement, or assignment, and delivery. A registered bond is payable to, and the ownership of a stock certificate rests with, the individual or institution whose name is inscribed on its face and requires transfer when the ownership changes.

**Assignment.** The registered bond certificate and the stock certificate have an assignment form printed on the back by which transfer can be effected. The usual assignment form on a stock certificate is as follows:<sup>13</sup>

For value received, ----- hereby sell, assign, and transfer unto -----, ----- shares of the capital stock represented by the within certificate and do hereby irrevocably constitute and appoint ----- attorney to transfer the said stock on the books of the within-named company with the full power of substitution in the premises.

Dated -----, 19----

In the presence of:  
-----

The assignment form provides a space for the name of a witness to the signature. Anyone may act as witness, except that in a few states a married woman's assignment of a stock certificate must be acknowledged before a notary public. The endorsement or assignment must be guaranteed by a responsible financial institution. It is the custom of New York Stock Exchange member firms to guarantee the execution of the assignment of stock received by them from their customers for sale on the Exchange. A proper representative of the firm stamps "Signature Guaranteed" and writes his name below the stamped notation, which means that the firm guarantees to the future holder that the signature is genuine and that the person making the assignment has full right to do so.

<sup>13</sup> Though the assignment form provides for the signature of a witness, such signature is no longer required.



The law holds the firm responsible if the signature is a forgery or if the assignment is not made with proper authority. If there is uncertainty as to the signature, the assignment should be guaranteed by the customer's bank or acknowledged by a notary public. A certificate in proper form, properly signed in blank, properly witnessed, and guaranteed by a member of the Exchange is good delivery on the Exchange and may pass from hand to hand without modification.

The stock certificate of the American Telephone & Telegraph Company, for example, states:

The signature of the stockholder to the assignment must correspond with the name as written upon the face of the certificate in every particular without alteration or enlargement or any change whatever. The signature should be guaranteed by an incorporated bank or trust company, or by a New York, Boston, Philadelphia, Chicago, or Washington stock exchange member or firm, whose signature is known to the transfer office, or witnessed by a responsible person whose signature is known. If it is impracticable to secure such guarantee or witness, the signature should be acknowledged formally before a notary public, who must certify under his seal with date that the person signing is known to him to be the person named on the face of the certificate.

When stock is to be transferred to a customer's name, the broker sends the certificate to the corporation's transfer office and a new certificate is issued. This may take a week or even longer if the transfer office is out of town. Stock cannot be transferred while the corporation's books are "closed" for dividends or for any other reason.

A coupon bond, on the other hand, is payable to "bearer." Title to it is transferred by simple delivery.

Under the Personal Property Law of New York (Section 172) every seller of a negotiable instrument implies, in transferring the security to the buyer, that the instrument is genuine, that the seller is not aware of any defect in its validity, and that the seller is the legal owner with full power to sell.

*Buy-in.* In the event that the seller fails to make delivery within the designated time, the buyer has the right to a "buy-in." In this instance, the buyer's broker purchases a like quantity of the security from another seller's broker on a cash basis and holds the original seller liable for any higher cost. In practice, however, resort to a "buy-in" is made only after repeated failures to obtain delivery.

**Bond quotation.** When a broker effects a sale in the bond market on the New York Stock Exchange, it is understood that the sale is

for a coupon or bearer bond, unless the contract is made specifically for a registered bond. Separate quotations are made for the registered bond and for the coupon bond, as the one is not good delivery for the other. The bearer or coupon bond usually sells at a slightly higher price than the registered bond. For example, Northern Pacific 4's of 1997 sold on the same day at  $74\frac{1}{2}$  in coupon form and at 71 in registered form, and Central Railroad of New Jersey 5's of 1987 sold at  $20\frac{7}{8}$  in coupon form and at 19 in registered form. Similarly, approximately \$28,000,000 of the \$48,000,000 of West Shore Railroad 4's of 2361 outstanding are in registered form and because of their more restricted marketability have sold at an average three to four points below the price of the coupon bonds. The transfer of a registered bond involves some delay, formality, and expense. Since the basic price, therefore, is usually for the bearer bond, the price for a registered bond of the same issue is usually slightly lower than the current price for the bearer bond.

**Margin buying.** Securities may be purchased for cash or on margin.<sup>14</sup> In a purchase for cash, a deposit of a substantial portion of the cost of the purchase must accompany the initial order unless the customer is known to the broker. A confirmation of the trade is mailed to the customer on the day the transaction is made showing the number of shares purchased, the price paid, the broker's commission, and the total amount due. Upon receipt of this confirmation the customer is required to pay the balance due when the stock is received on delivery date. When the security is paid for in full, it is transferred to the name of the buyer. The purchase of a security on margin is handled in much the same manner as a purchase for cash except that the broker advances a part of the cost price and holds the security as collateral for the amount due him.

*Purpose.* The trader who buys a stock on margin anticipates that the stock will rise in price and that he will make a profit represented by the difference between the higher price at which he hopes to sell it and the lower price at which he bought it. In order to reduce his own investment in the stock, he buys the stock on margin, with an initial partial payment in cash, instead of on a cash basis, paying the full price in cash. He pays only part of the purchase price and borrows the rest from the broker. He takes a position in the stock with a partial investment on his part.

<sup>14</sup> In opening a cash or margin account, the customer is required to fill out a special form which includes, among other things, his authorized signature, occupation, business references, and citizenship. For a margin account a form of agreement is also required. See Appendix C for forms of agreement.

*Regulation.* The extent to which a trader may buy on margin is subject to the regulations of the Federal Reserve Board and the New York Stock Exchange. While the margin requirement of 100 per cent, effective January 21, 1946, eliminated new purchases on margin, the operation of a margin purchase may be explained in terms of the requirement effective during the period July 5, 1945, to January 19, 1946. Under this margin requirement the cash payment must be at least 75 per cent of the cost price. In lieu of cash, the trader may deposit eligible securities with the broker, but the amount lent by the broker may not exceed 25 per cent of the aggregate cost of the new purchase and the market value of the deposited securities. Margin purchases are also restricted by the rules of the New York Stock Exchange. Stocks selling at \$10 or under a share and bonds selling for less than \$10 for each \$100 of principal amount must be bought for cash and paid for in full. In addition, all margin accounts must have a minimum equity of \$1,000.<sup>15</sup>

*Margin purchase.* If 100 shares of a stock are purchased at \$50 a share on margin, the buyer must make a cash payment of 75 per cent of the cost price, plus commission, or must deposit securities of sufficient market value so that the amount lent by the broker does not exceed 25 per cent of the aggregate market value of the new purchase and the deposited securities. Ignoring commissions, for purposes of illustration, the buyer of 100 shares of a stock on margin at \$50 a share must make a minimum cash payment of \$3,750, and borrows \$1,250 from the broker.<sup>16</sup> The buyer, with a cash investment of \$3,750, has taken a position in 100 shares of the stock with a market value of \$5,000. The broker's loan of \$1,250 is secured by the stock with a market value of \$5,000. The cash payment by the buyer is known as his "equity," and the \$1,250 borrowed from the broker is called his "debit balance." The buyer's equity, therefore, is 300 per cent of the debit balance ( $\$3,750/\$1,250$ ).

In order to complete the margin purchase for his customer, the broker must be prepared to pay for the stock by 12 : 30 P.M. of the third full business day following the date of purchase. The broker

<sup>15</sup> The proceeds of sales of securities in accounts that are undermargined must be used to the extent necessary to increase the margin on the remaining securities in the account until the whole account is brought up to a 75 per cent basis.

<sup>16</sup> Brokerage houses require a minimum initial payment in cash or its equivalent in acceptable securities in order to open a margin account. The rights of the broker and the customer are governed by the margin agreement signed by the customer. This agreement includes, among other things, permission to hypothecate the customer's securities and to sell out the account for lack of sufficient margin.

may finance the margin transaction with his own funds or he may borrow the day's requirements at his bank with a demand or time note. Such loans may be arranged through the call-loan market. Money borrowed on demand or through time loans is secured by the deposit of stocks or bonds.<sup>17</sup> Call loans made in the New York money market are usually renewed daily at the rate for the day.<sup>18</sup> Inasmuch as the debit balance constitutes a loan, the broker charges the customer interest at a rate that is higher than that paid by the broker and that begins to accrue on the day on which the stock is delivered. When later the customer orders the broker to sell the stock, the broker credits the customer with the net proceeds of the sale on the second day following the sale. Interest on the debit balance does not cease until the credit is entered on the books after the sale.

During the period when the stock is held on margin, the broker regularly collects all dividends that may be paid on the stock and credits those dividends to the customer's account as they are received.<sup>19</sup> If, in accordance with the order of the customer, the stock is sold later on a date which is after the declaration of a dividend on the stock but prior to the ex-dividend date, the buying broker has the stock transferred to his name immediately upon receipt of the stock, in which case the dividend is paid by the corporation to the customer of the buying broker. On the other hand, if there is not time to effect the transfer before the ex-dividend date, the selling broker will give the buying broker a "due bill." A "due bill" is a form of promissory note by which the seller, who still has the stock registered in his name when the corporate books close, promises to pay the current dividend to the buying broker, who has received the stock too late to have it transferred to his name. This "due bill" will appear on the books of the buying broker among the "due bills receivable."

*Maintenance requirement.* If, during the period when the stock is held on margin, the market price of the stock should decline, the

<sup>17</sup> In 1944, reporting member banks in New York City revised the method of reporting security loans to brokers and dealers. The former item "loans to brokers and dealers in securities" was broken down into two sections — loans on United States Government obligations and those on other securities, the bulk of which represents borrowings for stock market operations. Other loans for purchasing or carrying securities also were divided into two categories — United States Government obligations and other securities loans.

<sup>18</sup> Since call-loan funds represent the residual loanable funds, the rate is influenced directly by changes in the demand for and supply of funds.

<sup>19</sup> Dividends paid in stock are received into the account as so many additional shares. In the interim between the closing of the books and the payment, the amount of the dividend is counted as a part of the customer's margin.

maintenance margin is subject to the rules of the New York Stock Exchange. Under those rules the buyer is required to deposit additional margin (either cash or additional securities) when his equity falls below 25 per cent of the market price of the stock.<sup>20</sup> In that case the buyer would be obliged to deposit additional margin when the market price of the stock purchased on margin reaches  $16\frac{5}{8}$  a share as indicated by the following table:<sup>21</sup>

<i>Market Price per Share</i>	<i>Total</i>	<i>Equity</i>	<i>Debit Balance</i>	<i>Equity/Market Price (%)</i>
\$50	\$5,000	\$3,750	\$1,250	75 00
25	2,500	1,250	1,250	50 00
20	2,000	750	1,250	37 50
$16\frac{3}{4}$	1,675	425	1,250	25 37
$16\frac{5}{8}$	1,662 50	412.50	1,250	24.81

The broker demands additional funds or collateral to protect the margin account by sending a "margin call" to the customer. If the customer fails to provide the additional margin, the broker "sells out the margin account"; that is, he sells a sufficient amount of the stocks in a diversified account to bring the equity up to the minimum requirements and out of the proceeds of the sale collects his loan and other expenses and charges.

**Short sale.** A short sale is one in which the seller is "short" of the stock, that is, he is not prepared to deliver the stock on a sale the regular way. The short seller may be a speculator who does not own the stock but who, anticipating that the market price of the stock will decline, expects to make a profit by selling the stock short now and buying it back at a lower price later. If his anticipation is confirmed, he will secure a profit measured by the difference between the price at which he now sells it and the price at which he may later buy it, less expenses involved in the transactions. For example, if the speculator sells short now at 55 and covers the short sale—later buys the stock in the market—at 50, he has made a profit of \$5 a share, less expenses. On the other hand, the short seller may actually own the stock but is either not prepared to make delivery the regular way or wishes to hedge against a decline in market price of the security.<sup>22</sup>

<sup>20</sup> Individual brokerage firms may establish maintenance requirements that are higher but not lower than those prescribed by the Exchange.

<sup>21</sup> A formula for the determination of the market price at which the equity is 25 per cent of the market price is: debit balance/75 per cent. In the above case, application of the formula shows that with a debit balance of \$1,250 the equity would be 25 per cent of the market price when the market value declined to \$1,666.67 or  $16\frac{3}{4}$  a share, and less than 25 per cent at a market value of \$1,662 50 or  $16\frac{5}{8}$  a share.

<sup>22</sup> The latter is sometimes called "selling against the box."

*Restrictions.* Two restrictions, however, are placed on a short sale by the Securities and Exchange Commission. The sale must be designated as a "short" sale when the order is placed, and it cannot be executed at a price below that established in the last preceding regular (as distinguished from short) sale. A short sale may be made at the level of the last transaction if the previous price change the regular way was upward. For example, if a stock sells 38 $\frac{7}{8}$ –39, a short sale may be made at 39. On the other hand, if the last price change has been downward, the short sale must be made above the last price. For instance, if the stock sells 39–38 $\frac{7}{8}$ , the next short sale must be at 39.<sup>23</sup> The purpose of these restrictions is to prevent "bear raiding"—that is, the use of short sales to depress the market price of the issue.

*Borrowed stock.* When a short sale is effected, the seller contracts, through his broker on the floor of the Exchange, with the broker of the buyer—who is not aware that he has purchased from a short seller—to deliver the stock to the buyer's broker by 12 : 30 P.M. of the third full business day following the sale.<sup>24</sup> The short seller, now having sold the stock, must borrow the required stock in order to make delivery. His broker borrows the stock from another broker who has the required stock available for lending.<sup>25</sup> The borrowed stock is listed on the clearing sheet of the seller's broker as if the stock had been bought. The buyer's broker will receive delivery from the seller's broker before 12 : 30 P.M. of the third following full business day. So far as the buyer is concerned, the transaction is completed.

In the meantime, a special relationship has arisen between the seller and the lending broker. The lending broker receives from the seller the full market price of the stock in cash at the time of delivery

<sup>23</sup> Short sales are governed by Rule X-10A-1 of the Securities and Exchange Commission under the Securities Exchange Act of 1934. The rule has operated to prevent short sales in certain cases not intended at the time of its adoption, namely, when price declines result from the fact that the security has gone ex-distribution. In May, 1943, the Commission revised the rule to provide that in determining the price at which a short sale may be made in a security that has gone ex-dividend, ex-right, or "ex" any other distribution, all sales prices for the security prior to the "ex" date may be reduced by the value of such distribution.

<sup>24</sup> Under Regulation T of the Federal Reserve Board, the margin required for short sales of securities (other than exempt securities) was increased from 75 per cent to 100 per cent of the current market value of the security by the regulation in effect January 21, 1946.

<sup>25</sup> The stock which these brokers ("loan crowd") have available for lending is stock which they own or stock of their customers who have consented to allow the stock to be used for this purpose. These brokers are at the loan post every day, lending and borrowing stocks from about 9 : 45 A.M. to 1 : 30 P.M., and again from 3 : 00 P.M. to 3 : 30 P.M.

of the stock. Both stock and cash are held on a basis similar to a call loan. The broker who has lent the stock can call for the return of his stock at any time on reasonable notice and upon returning the money he holds. Similarly, the broker who has borrowed the stock, on reasonable notice, can demand back his money on delivery of the borrowed stock. The broker who has lent the stock always holds the full market value of the stock in cash. If the market price of the stock rises, the broker who has borrowed the stock must deliver sufficient additional cash to the lending broker to equal the rise in price. If, on the other hand, the market price of the stock declines, the borrowing broker can demand that the lending broker return that part of the cash which he holds over and above the present market value of the stock.

*Basis of loan of stock.* As the short seller's broker must deposit the full cash value of the borrowed stock as security for the stock, the lending broker has the use of the cash during the period the stock is lent. The stock may be lent "and interest," "flat" or "at a premium." "And interest" means that the lending broker pays a small interest charge for the use of the cash. The rate of interest is quoted on an annual basis. "Flat" means that the lending broker is not required to pay for the use of the cash. "At a premium" means that the short seller pays the lending broker a premium for the use of the stock. The premium is quoted as a given number of dollars per day per 100 shares. For example, the following quotations prevailed at the close of the market on a trading day:

Eastman Kodak common . . . . .	premium of \$2 per 100 shares
American Can common . . . . .	premium of \$1 per 100 shares
Union Carbide common . . . . .	premium of \$1 per 100 shares
All others . . . . .	flat

Since the borrowed stock has been delivered to the buyer, who has had it recorded in his name or whose broker has had the stock put in his name, all dividends and rights will go to the buyer or his broker (for the benefit of the buyer). The delivered stock, however, was borrowed from the lending broker, who really is entitled to all dividends declared and rights issued during the time the stock is borrowed. The short seller's broker, therefore, pays to the lending broker all cash and stock dividends declared and all rights issued during the period the stock is borrowed and, at the same time, charges the short seller's account for the amount of the cash dividend and the value of the stock dividend and rights.

*Covering short sale.* The short seller "covers" his short sale later by buying on the market an equivalent number of shares of the stock he had previously sold short. The stock thus purchased is returned to the lending broker, who returns to the short seller's broker the cash he then holds for the stock. If the short seller covers his short sale at a price substantially lower than the price at which the short sale was made, he makes a profit measured by the difference between the two prices, less the expenses. On the other hand, if the short sale is covered at a price higher than the short sale, he suffers a loss measured by the difference between the two prices, plus expenses.

**Stop order.** A stop order is an order to sell a security "at the market" when the market price falls to or below a price specified by the seller, or to buy "at the market" when it has risen to or above a price specified by the buyer. It is used as a safeguard against too great and too sudden a change in the market price. The purpose of a stop order is not to eliminate loss but rather to limit it should the changing market price go against the trader.

*Uses.* The stop order may be used either to limit the loss or to protect the profit on a security held, or to limit the loss on a short sale. For example, a trader who purchased stock at 65 and who wishes to limit his possible loss to approximately \$5 a share places an order to "sell 100 shares of X common at 60 stop." In this case the purpose of the stop order is to limit the loss to approximately \$5 a share. A trader who holds a stock quoted at 80, which he purchased at 70, but which he is not ready to sell, may insure the retention of part of the profit in the event of a decline in price by placing a stop order at 75. Should the market price decline to 75, the stop order becomes a market order and the trader obtains a profit of approximately \$5 a share. On the other hand, a trader who has sold 100 shares short at 50 may place a stop order to buy at 55, thus limiting his loss to approximately \$5 a share in covering the short sale.

*Execution.* The order to "sell at 60 stop" is not an order to sell at 60 but rather an order to sell if and when the price declines to 60. When the market price reaches 60 the stop order becomes effective as a market order, which means in most cases that the stock is sold at less than 60.<sup>26</sup> An odd-lot stop order to sell is executed on the first 100-share sale at or below the stop price at  $\frac{1}{8}$  of

<sup>26</sup> Open sell stop orders are automatically reduced by the amount of the dividend on the day a stock sells ex-dividend.



a point differential. For example, an order to "sell 20 General Electric at 45 stop" would be executed at  $44\frac{7}{8}$  if 100 shares sell at 45. Should the price for General Electric decline from  $45\frac{1}{8}$  to 43 without any intervening sales, the stop order would be executed at  $42\frac{7}{8}$ .

In like manner, an order to "buy 100 shares at 55 stop" when the market price is below 55 is not an order to buy at 55 but rather an order to buy if and when the price rises to 55. When the market price reaches 55 the stop order becomes effective as a market order, which means in most cases that the stock is bought at more than 55. An odd-lot stop order to buy is executed on the first 100-share sale at or above the stop price at  $\frac{1}{8}$  of a point differential. For example, an order to "buy 20 General Electric at 45 stop" would be executed at  $45\frac{1}{8}$  if 100 shares sell at 45. If the price reached  $44\frac{7}{8}$  and the next sale was 46, without any intervening sale, the stop order would be executed at  $46\frac{1}{8}$ .

*Technical position of market.* From the standpoint of the market, an accumulation of stop orders just under current prices makes the market "technically weak." Under such conditions, a limited amount of selling sets off a wave of stop orders; each declines in price, making successively lower stop orders effective and bringing additional stop orders into the status of market orders.

**Specialists.** A specialist in a stock is a broker who specializes in transactions in that stock on the floor of the exchange. He remains constantly at that post and acts both as a broker and as a principal in handling orders. As a broker he executes orders for other brokers on a commission basis; as a principal he buys and sells for his own account. If a commission broker receives an order to buy, say, General Electric common stock, at the market, he approaches the specialist in that stock, who either fills the order from stock for which he has sell orders or, if he has none, sells the stock short for his own account, expecting to acquire the stock at a slightly lower price in time to make delivery the regular way. On the other hand, if a commission broker receives an order to sell the stock, the specialist buys it either to fill an order he has on his book or, if he has none, for his own account.

*Book.* The specialist maintains a "book" in the stock in which he enters all orders received from other brokers to buy and to sell the stock at prices which are "away" from the prevailing market price. Those orders are entered as they are received. A sample page from the book of a specialist showing the unfilled orders would appear as follows:

## GENERAL ELECTRIC COMMON

<i>Buying Orders</i>	<i>Last Sale</i>	<i>Selling Orders</i>
100 at 40		
100 at 41		
200 at $41\frac{1}{2}$		
100 at 42		
200 at $42\frac{1}{2}$		
100 at 43		
	$43\frac{1}{2}$	
		100 at $43\frac{1}{2}$
		200 at 44
		500 at $44\frac{1}{2}$
		300 at 45
		200 at 46

The page shows the volume of orders in the stock at prices between 40 and 46; other orders, which are not shown in the illustration, are held below 40 and above 46. Within the range shown in the illustration, the highest bid is for 100 shares at 43; the lowest offer is 100 shares at  $43\frac{1}{2}$ . The quotation, therefore, is  $43-43\frac{1}{2}$ . An order to buy 300 shares at the market would be executed as 100 at  $43\frac{1}{2}$  and 200 at 44. On the other hand, an order to sell 300 shares at the market would be executed as 100 at 43 and 200 at  $42\frac{1}{2}$ .

*Function.* The significance of the function of the specialist lies in providing a convenient point of concentration for orders which could not otherwise be handled expeditiously by the regular brokers. His willingness to buy and sell stock for his own account tends to narrow the spread between bid and asked prices. Some risk is involved, but risk-taking is part of his function. From a practical standpoint, however, his intimate knowledge of potential buying and selling orders involves little risk in buying stock at prices only slightly above that on actual buying orders on his book or in selling stock at prices only slightly lower than that on actual selling orders on his book.<sup>27</sup>

<sup>27</sup> The operations of specialists on the New York Stock Exchange are supervised by the Committee on Floor Procedure. In November, 1938, the committee classified specialists into four groups: regular, relief, associate, and temporary. Since January 1, 1939, all specialists, except temporary, must be registered with the committee, and temporary specialists must be authorized by the committee. A regular and a relief specialist are expected, in so far as practicable, to maintain a fair and orderly market, which implies the maintenance of price continuity and the minimizing of the effects of temporary disparity between supply and demand. An associate specialist assists a regular or a relief specialist in the execution of orders. He is not responsible for the maintenance of stabilization of the market by purchases or sales for his own account and is prohibited from handling the book or making any bid or offer except in the presence of the regular or the relief specialist. A temporary specialist can be approved by any member of the committee to function in an emergency when no regular specialist is present or the volume of transactions is too great for the regular or relief specialist to handle. While functioning as a temporary specialist, a member is under the same obligation as a regular specialist.

**Options.**<sup>28</sup> An option is a negotiable contract that involves the right to buy or to sell 100 shares of a stock at a specified price and within a stated time.<sup>29</sup> Options in the securities market are based upon the same principle as options to buy real estate. An option to buy a piece of real property is a contract under which the owner of the land, for a consideration, gives to the potential buyer the right to buy or to refuse to buy the property by a certain future date at a specified price. At the time of the granting of the option, no transfer of the property takes place. If, on or before the expiration date of the option, the buyer exercises the option, the property has cost him the price agreed upon for the property and the cost of the option. If, on the other hand, he does not exercise the option, the only expense to him has been the cost of the option. In the meantime, however, he has enjoyed the exclusive privilege of buying the property at a specific price.

*Market.* Traders in securities use the same process to limit losses and to insure profits by the purchase of options, called "puts" and "calls." Inasmuch as members of the New York Stock Exchange are not permitted to trade in options on the floor of the Exchange, the market in options is conducted outside the Exchange by brokers and dealers who specialize in options. They are members of the Put and Call Brokers' and Dealers' Association, Inc., and are registered with the Securities and Exchange Commission. Option contracts secured through the members of the Association are guaranteed or endorsed by members of the New York Stock Exchange or their firms. By express agreement with the buyer, however, options may be guaranteed by members of other exchanges or their firms.

*Put.* A "put" is a contract under which the purchaser or holder has the right at his option to sell (deliver) to the maker a specific number of shares of a designated stock (usually 100) at a stated price within a specified time (usually 30 days). The 30-day option usually expires at 2 : 45 on the thirtieth day. Options may be for 30 days or 90 days or "specials." A rule of the Put and Call Brokers' and Dealers' Association prohibits options for a period of less than 21 days.

The "stated price" for a "put" may be either "at the market" or "below the market." For example, 30-day "puts" on United States Steel common were "at the market" on the same day that

<sup>28</sup> See Appendix D for contract forms.

<sup>29</sup> Though the unit of trading is 100 shares, it is possible to deal occasionally in 50-share lots.

30-day "puts" on Bethlehem Steel common were "one point below the market." "Below the market" spreads may vary according to the stock. For instance, 30-day "puts" were quoted at  $\frac{1}{4}$  below for Standard Oil Company of New Jersey common,  $\frac{1}{2}$  below for United States Steel common, and  $1\frac{1}{2}$  below for Bethlehem Steel common on the same day. The "put" for United States Steel common "at the market" meant that the buyer of the "put" had the right to deliver<sup>30</sup> to the seller of the "put" at any time within 30 days from the date of the "put" and on one day's notice (except the last day, when notice is not required) 100 shares of United States Steel common stock for which the seller of the option would have paid the market price prevailing on the date of the option.<sup>31</sup> On the other hand, the "put" for Bethlehem Steel common "at one point below the market" meant that, upon exercise of the "put" by the buyer, the price of the stock to the seller would be one point below the market price prevailing on the date of the option.

A trader holding 100 shares of a stock selling at \$40 a share who fears that the price may decline substantially because of an impending development but who otherwise desires to keep his stock may purchase a "put" with the price "at the market." If then the market price declines to 35, the buyer of the "put" may exercise it by delivering the stock to the seller of the option, who pays the buyer of the option \$40 a share for the stock. In this way the trader has limited his loss to the cost of the option.

*Call.* A "call" is a contract under which the purchaser or holder has the right to buy the stock from the maker at a stated price within a specified time. The "stated price" for a "call" may be "at the market" or "above the market." For example, 30-day "calls" on Youngstown Steel common were "at the market" on the same day that similar "calls" on Bethlehem Steel common were at " $\frac{3}{4}$  of a point above the market." "Above the market" spreads may vary according to the stock. For instance, 30-day "calls" were quoted at "1 above" for United States Steel common and " $1\frac{1}{2}$  above" for Bethlehem Steel common on the same day. The "call" for Youngstown Steel common "at the market" meant that the

<sup>30</sup> The contract must be presented to the cashier of the firm by whom it is endorsed before the expiration of the exact time limit. It is not acceptable after it has expired and cannot be exercised by telephone, delivery must be made according to New York Stock Exchange usage.

<sup>31</sup> All dividends for which the transfer books close during the period go with the stock. In the exercise of a "put" the owner is required to pay, and of a "call" the holder is entitled to receive, any dividends, rights and bonuses on shares quoted "ex" during the life of the option.

buyer of the "call" had the right to call upon the seller of the "call" at any time within 30 days from the date of the "call" and on one day's notice (except the last day when notice is not required) to deliver to the buyer 100 shares of Youngstown Steel common for which the buyer would pay the seller the market price prevailing on the date of the option. On the other hand, the "call" for Bethlehem Steel common "at  $\frac{3}{4}$  of a point above the market" meant that upon exercise of the "call" by the buyer, the price of the stock to the buyer would be  $\frac{3}{4}$  of a point above the market price on the date of the option.

A trader, considering the purchase of 100 shares of a certain stock selling at \$40 a share, who feels that the time is inopportune but who fears that the price might rise suddenly while he is waiting, may purchase a call "at the market." If then the market price of the stock rises to \$45 a share, the buyer may exercise the "call" by calling upon the seller to deliver the stock to the buyer, who pays the seller \$40 a share for the stock.<sup>32</sup>

*Function.* The chief economic function of options is to provide a means of reducing the risk of loss. The holder of an option knows in advance the exact extent of his possible loss regardless of fluctuations in the market price of the stock. In the event the market moves contrary to the expectations of the owner of stock protected by a "put," the loss is definitely limited to the amount of premium paid for the option plus the difference between the price of the stock prevailing at the time the option was bought and the price specified in the option contract. If, on the other hand, the market advances and the price of the stock on the expiration date is higher than the "put" price, the holder can permit the option to lapse and sell his stock if he desires. Obviously the profit is reduced by the cost of the option. The "call" insures the trader against loss in the case of the sale of stock protected by a "call." If the stock declines, he can re-buy the stock profitably.

*Price.* Options are written by option dealers, who set the price which the buyer must pay for the option. The price of the option is influenced by the length of the option and by market conditions. Options "at the market" (price prevailing at the time the option is purchased) are much dearer than those where the option price (price named in the contract) is a number of points away from the

<sup>32</sup> The state of New York and the federal government require that stock transfer stamps be attached to "call" contracts but not to "puts." The buyer of the "call" pays this tax, which is the same as the tax paid when selling shares of stock. The maximum is \$10 per 100 shares and decreases according to the price and par value.

current market price. The latter sell at a fixed premium of \$137.50 per 100 shares. In an active bull market, "calls" are dearer than "puts" and may be difficult to obtain, whereas in times of sharp decline, "puts" are dearer than "calls" and may also be difficult to purchase. In dull markets both "puts" and "calls" are low in price. Options on stocks where the fluctuations are small can be bought more reasonably than on those which move erratically and where the daily spread can and does amount to many points. Options for a longer period of time are considerably more expensive than those that run for a shorter period of time. There is usually a differential between the price of a "put" and the price of a "call" on the same bond or stock. For example, 90-day "puts" on United States Steel common were quoted at \$250 (100-share option) at the same time that "calls" on the same stock were quoted at \$325 (100-share option). Similarly, every bond or stock has a separate quotation.

*Straddle and spread.* A straddle and a spread each represent the simultaneous purchase of a "put" and a "call." The buyer has the right either to buy or to sell the stock, or to buy and sell the stock, within a specified period of time. The buyer will exercise the "call" if the market price of the stock on the due date is higher than the option price, and he will exercise the "put" if the market price of the stock is below the option price. The two forms of option differ, however, in that the straddle permits both the "put" and the "call" to be exercised at the same price (the actual market price), whereas the spread specifies one price for the "call" and a different price for the "put," with a "spread" between the two prices.

**Accumulation and distribution.** In a restricted market, with limited buying and selling orders in the hands of brokers, any attempt to execute a large order immediately would have an unfavorable effect upon the prevailing price. In order, therefore, to acquire a large number of shares of a particular stock at a more favorable price, the trader employs a procedure known as "accumulation," under which the desired quantity is acquired by gradual purchase. In like manner, a trader who wishes to dispose of a large number of shares of a stock at a more favorable price follows the practice called "distribution" under which the stock is disposed of by gradual sale.

**Arbitrage.** Arbitrage is the simultaneous purchase and sale of securities to take advantage of a discrepancy in prices. It may be conducted in the same security in two different markets or in

equivalent securities in the same market. An arbitrage operation in the same security in two different markets is possible where, for example, a stock is selling at a higher price in the London market than in the New York market. A profit is possible by a simultaneous sale of the stock in London and purchase in New York. In September, 1938, the threat of another World War arising out of the Sudetenland controversy between Germany and Czechoslovakia provided a situation favorable to this type of arbitrage. On the theory that American markets were more upset over conditions in Europe than foreign markets, some traders sold large blocks of stock in the London market on September 15, 1938, before the opening of the market in New York and covered in the New York market later the same day.

An arbitrage operation in two securities in the same market may arise (a) between a stock and the "rights" which have been declared on the stock; (b) between a bond and the stock into which it is convertible; or (c) between the old and the new securities in a reorganization.<sup>33</sup> In July, 1941, financing by American Telephone & Telegraph Company resulted in the establishment of a market on a "when issued" basis for dealings in "rights" and \$234,000,000 of convertible debenture 3's. While prices for both the "rights" and the debentures were closely geared to each other, there were opportunities for narrow profits if the "right" could be bought on the bid side and the debentures sold on the offer side. The "rights" were: bid,  $1\frac{1}{2}$ ; asked,  $1\frac{3}{4}$ . Under the terms of the offering, the stockholder could buy a \$1,000 debenture at par for every 80 shares of stock. At the bid price of  $1\frac{1}{2}$ , the cost of 80 "rights" was \$117.50, which, when added to the \$1,000 purchase price of the debenture, made a total cost of \$1,117.50. The market price of the debentures at the same time was bid:  $111\frac{3}{4}$ ; asked: 112. To make a profit, the trader would have had to sell the debenture at the asked price of 112, or \$1,120 less 50 cents federal transfer tax, a net sale price of \$1,119.50. The difference represented a profit of \$2 (\$1,119.50 - \$1,117.50).

*Quasi-arbitrage.* In 1942 traders were attracted to the quasi-arbitrage possibilities in railroad reorganization bonds arising out of the fact that there were substantial differences in the market price of the old bonds and of the securities which were to be issued

<sup>33</sup> The short position of 39,329 shares of General Motors common stock and of 41,298 shares of Pepsi-Cola in June, 1944, was believed to be partly on arbitrage dealings in connection with the acquisition of Yellow Truck by the former and of Phoenix Securities by the latter.

under reorganization plans in exchange for the old bonds. The issuance of the new securities, however, was contingent upon the successful consummation of the reorganization plans. A quasi-arbitrage differs from a true arbitrage in that a trader in a reorganization plan buys the old security but sells the "when, as, and if issued" equivalent. Should material changes occur in the plan of reorganization, the "when, as, and if issued" contract becomes void, leaving the trader "long" of the purchased bonds. The current good earnings and favored tax position of the railroads, however, had developed a more favorable attitude toward railroad bonds, so that traders were less disturbed than formerly by the possibility of being left "long" of purchased bonds.<sup>34</sup>

*Function.* Arbitrage operations tend to maintain prices on an equivalent basis. With so many expert traders watching the situation, there is little opportunity for prices to get out of line for any considerable period.

*Special offering.* Under a special offering, members and member firms offer through the facilities of the New York Stock Exchange a block of stock that cannot otherwise be absorbed on the floor within a reasonable time and at reasonable prices. The first special offering on the New York Stock Exchange was a block of 2,958 shares of Bon Ami Company "B" stock on February 19, 1942.<sup>35</sup> Provision for special offerings also prevail on the San Francisco, Philadelphia, Detroit, Chicago, and Cincinnati Stock Exchanges and on the New York Curb Exchange.

*Procedure.* Security owner A, with a large block of stock which he desires to sell, approaches Exchange member X and offers to sell the stock at 40, the latest market price, with a special commission of  $\frac{1}{2}$  point to any broker who acts as an agent for a buyer. If the Exchange member X is interested, he applies to the Stock Exchange for permission to make a special offering. No special offering may be made unless the Exchange decides that the shares could not be disposed of in a reasonable time interval through the ordinary

<sup>34</sup> A factor which complicated the computation of possible profits was the dual problem of interest payment on existing bonds and interest accruals on "when issued" bonds. Fixed interest accruing up to the delivery date on the new bonds belongs to the seller and all contingent interest to the purchaser. Certain current payments had been specified to be on account of fixed interest accruals while other payments by the same railroad had not been designated.

<sup>35</sup> Under Rule X-10B-2, the Securities and Exchange Commission prohibited any person participating in the distribution of a security issue from paying another person to solicit purchases of the securities on an exchange in order to facilitate their distribution. The Commission revised its rule, however, in February, 1942, to permit special offerings.



auction method without a possible unwarranted or unreasonable disturbance of the price level. Except in special circumstances, the Exchange has not permitted a special offering unless the offering involves at least 1,000 shares of stock or shares having an aggregate market value of \$25,000, whichever is greater.<sup>36</sup> In determining whether the privilege of making a special offering shall be granted, the Exchange takes into consideration the daily price range and the volume of transactions in the stock on the floor of the Exchange during the preceding six months; attempts which have been made to dispose of the stock in the regular market on the floor; existing conditions of the specialist's book in the stock; the past and current interest in the stock on the floor; and the number of shares and current market value of the block proposed to be covered by the special offering. The rules of the Exchange require that the offerer must be the owner of the entire block of stock offered and prohibit both piecemeal or successive offerings of the same security by the same offerer and offerings on an "all or none" basis.

Upon approval by the Exchange and at the hour stipulated for the sale, the special offering is printed on the tape showing the gross price and special commissions in a legend such as "SP OFF 10000 XYZ 40 COM  $\frac{1}{2}$ ," and orders for the stock are received on the floor of the Exchange. Only members and member firms may receive the special commission. An uncompleted offering, however, may not be terminated without the approval of the Exchange. In many cases the offering has been completed in less than fifteen minutes. One special offering of 28,700 shares of General Electric common was completed in four minutes.

*Commission.* The commission of one half of a point mentioned in the announcement is paid by the seller to the buying brokers for soliciting purchases. In this instance the buying brokers would pay 40 for the stock for the account of their principals and, instead of receiving a commission from the buyer, would be paid  $\frac{1}{2}$  point per share as commission by the firm making the offering. The seller would receive 40 for his stock but must pay the  $\frac{1}{2}$  point commission to the buying broker, a commission to his selling broker, and the federal and state transfer taxes. The gross cost to the seller in commissions must not be less than double the regular commission, but may be more. The broker who handles the trans-

<sup>36</sup> In 1944 the special offerings plan was made applicable to blocks of bonds provided they are not less than \$15,000 principal amount with an aggregate market value of \$10,000. The special commission may not exceed  $2\frac{1}{2}$  per cent of the selling price.

action initially for the client must obtain at least the minimum clearance commission, and the balance may be paid to the brokers obtaining the buying orders.

*Oversubscription.* In handling oversubscriptions, it is the policy of the Exchange to hold the books open for fifteen minutes so that all members may have an opportunity to submit bids.<sup>37</sup> At the end of this period, the books are closed and allotments made on a percentage basis of total orders received. For example, 5,000 shares of Hercules Powder Company common stock were offered at \$59 a share with \$1.15 commission. Since the total subscriptions to the 5,000 shares offered came to 9,025 shares, allotments were made on the basis of 55.4 per cent. A total of twenty-one member firms participated in the offering. The largest allotment was 920 shares and the smallest was 15 shares. At the same time 10,000 shares of National Distillers Products Corporation common were offered at  $25\frac{1}{4}$  a share, with 50 cents commission. As total bids aggregated 15,895 shares, allotments were made at the rate of 62.9 per cent. A total of fifty-nine purchases were made through thirty-three member firms during the fifteen minutes the offering was held open. The largest allotment was 1,130 shares and the smallest was 15 shares.

*Function.* It is not the purpose of a special offering to supersede the auction market. Prior to 1944, however, a special offering was automatically suspended when regular-way stock was offered at a price below that of the special offering. This sometimes resulted in a strange situation. The regular-way price might be only one eighth below the special price and yet actually above it when the commission was included. For example, with the special offering net price to the customer at 50 and regular-way stock offered at  $49\frac{7}{8}$ , the commission on the latter would raise the total cost to the customer to approximately  $50\frac{1}{8}$ . Effective April 25, 1944, however, a special offering priced between 8 and 50 is not suspended unless the regular-way offer is at least  $\frac{1}{4}$  below it. The differential must be at least  $\frac{3}{8}$  in the instance of special offerings priced at over 50. A special offering in a particular issue may be in progress on the Stock Exchange floor at the same time that regular trading is being conducted in the issue.

Prior to 1944, it was customary when regular-way stock was offered below the special offering price for brokers to get instruc-

<sup>37</sup> As a result of an amendment in 1944, an exception from this minimum requirement is given to any offering that has been announced on the ticker tape at least one hour before the offering becomes effective. An offering so exempt may not be closed without the approval of the Exchange.

tions from their customers. This invariably led to delay and often the regular-way stock was not available by the time the broker was empowered to act. A second rule, effective April 25, 1944, provided that a broker with a special offering order must buy any regular-way stock available if he could do so at a saving to the customer. The rule specifically provided that "every order for a purchase in a special offering shall be accepted pursuant to this condition."

**Secondary distribution.** A secondary distribution is the sale outside the Exchange, generally after regular trading hours, of a block of listed stocks or bonds too large for immediate sale on the Exchange. Large blocks of unlisted securities are also distributed by the same method. In 1940-1941 the British Government liquidated some of the American stock holdings of its subjects through secondary distributions. Since then, secondary distributions have consisted primarily of sales for tax purposes on behalf of estates and other large domestic holders. Among the blocks marketed in 1940-1941 were:

200,000	shares of	Commonwealth Edison
300,000	" "	United Gas Improvement
100,000	" "	Eastern Airlines
100,000	" "	Standard Oil of Indiana
180,000	" "	Consolidated Edison
500,000	" "	Standard Oil of New Jersey
250,000	" "	S. S. Kress
260,000	" "	Pennsylvania Railroad
200,000	" "	United States Steel
120,000	" "	Socony-Vacuum

One of the largest secondary distributions consisted of 704,121 shares of Chesapeake & Ohio Railway common stock marketed for Alleghany Corporation. Blyth & Co., Inc., formed a syndicate of more than eighty investment firms throughout the country to offer the stock directly to investors or through dealers. John D. Rockefeller distributed through Dillon, Read & Co. and associated investment banking firms stocks in the four leading Standard Oil companies having a total market value in excess of \$23,000,000. The securities involved were 500,000 shares of the Socony-Vacuum Oil Company, 200,000 of the Standard Oil Company of New Jersey, 100,000 Standard Oil of California, and 50,000 of Standard Oil of Indiana. A secondary distribution is not necessarily limited to a block of stock but may also be a block of bonds. In 1944, for example, Blyth & Co. offered \$225,000 of Georgia Southern & Florida Railroad first mortgage 5 per cent bonds due July 1, 1945.

*Participation.* A secondary distribution does not have to be cleared with the Exchange, since the participants are over-the-counter dealers. Participation is open, however, to Exchange member firms. In order for members of the New York Stock Exchange to participate in the secondary distribution of a security listed on the Exchange, the approval of the Exchange must be obtained. The member firm must request permission of the Exchange by 2 : 30 P.M., one-half hour before the close of the Exchange. In the Chesapeake & Ohio Railway common stock distribution, the Blyth firm, which was not a member of the Exchange, had to obtain permission for Exchange members to participate in the distribution. If the distribution has the approval of the Exchange, the announcement of the distribution is made on the stock ticker and the syndicate agrees to keep its books open to receive subscriptions for at least one-half hour after the notice. The New York Stock Exchange, however, has not approved all applications to permit member firms to participate in a secondary distribution. Dillon, Read & Co. offered 40,000 shares of Standard Oil Company of New Jersey stock through a secondary distribution while Mellon Securities Corporation and Blyth & Co. organized another secondary distribution to offer 75,000 shares of Commercial Solvents stock. Inasmuch as the three firms involved were not members of the Exchange, they could not invite member firms to participate without the consent of the Exchange. The Exchange took the position in each case that the market could absorb the stock as special offerings and refused to permit member firms to participate.

*Position of dealer.* A house that undertakes to make a secondary distribution may act as a principal, as a broker, or as a combined principal-broker. When acting as a principal, the house buys the block of securities outright from the seller at an agreed price. When a house acts as a broker, it agrees with the seller to sell the securities on a commission basis. Sometimes a house acts as a combined principal-broker, agreeing to buy part of the offering outright as a principal and to find buyers for the balance of the offering as a broker.

*Offering price.* The offering price to the public usually is at a fixed price, less a concession to dealers. Usually the price at which the securities are offered is that of the latest transaction on the Exchange, if the issue is listed, or at the current offering price in the over-the-counter market if the issue is traded exclusively over the counter. In the Chesapeake & Ohio Railway distribution, the offering price was  $46\frac{3}{4}$ , with a dealers' discount of ninety cents a

share. The John D. Rockefeller distribution was made at the closing sale prices for the issues on the New York Stock Exchange, less specified discounts to dealers, as follows: 500,000 shares of Socony-Vacuum Oil at  $13\frac{5}{8}$ , less 35 cents; 200,000 shares of Standard Oil of New Jersey at  $56\frac{1}{4}$ , less 75 cents; 100,000 shares of Standard Oil of California at  $37\frac{1}{2}$ , less 50 cents; and 50,000 shares of Standard Oil of Indiana at 33, less 50 cents. Similarly, the Georgia Southern & Florida Railroad first mortgage 5's of 1945 were offered at 95 and accrued interest, with a discount to dealers of one point. The concession must be attractive enough to induce the dealer to participate in the distribution. The profit of ninety cents a share in the Chesapeake & Ohio Railway distribution compared favorably with the usual brokerage commission of twenty cents.

*Significance.* The seller of the stock obviously obtains a lower net price for his stock than the closing level on the Exchange or over-the-counter, because the concession which the dealer receives is deducted from the price. On the other hand, the seller is able to dispose of a block of securities that could not otherwise be sold through the Exchange or over-the-counter except at a substantial sacrifice in price or over a protracted period.

Investors are attracted by a secondary distribution because (a) they save a commission charge; (b) they obtain the security at an assured price; and (c) they are offered a security not otherwise readily available. A secondary distribution of 50,000 shares of Liggett & Myers B stock was made at a net price to the public of  $80\frac{1}{2}$ . The buyer of 100 shares at this price through the secondary distribution saved \$32.63 in New York Stock Exchange commissions.

Secondary distributions have exceeded special offerings on the New York Stock Exchange both in number of distributions and in number of shares sold, as indicated by the following tabulation: <sup>38</sup>

	1944	1943	1942
Number of Shares Distributed . . . . .	5,857,763	4,900,636	3,545,432
Special Offering . . . . .	1,067,356	1,072,781	851,093
Secondary Distribution . . . . .	4,790,407	3,827,855	2,694,339
Number of Offerings . . . . .	230	215	220
Special Offering . . . . .	85	76	80
Secondary Distribution . . . . .	145	139	140

The total number of shares distributed by secondary distribution in 1944 was approximately 81 per cent of the total, compared to 78 per

<sup>38</sup> *A Review of Special Offerings and Secondary Market Distributions, 1940-1944*, Shields & Company, New York.

cent in 1943 and 76 per cent in 1942. In each year the number of offerings through secondary distribution was approximately 60 per cent of the total.

### Review Questions

1. How many commissions are involved in every security transaction on an exchange?
2. What is the established unit of trading on the New York Stock Exchange for bonds and for stocks?
3. Discuss the problem of filling orders to buy or to sell in multiples of the unit of trading.
4. Discuss the problem of filling an order to buy or to sell securities quoted at high prices.
5. Distinguish between a "market" order and a "limit" order.
6. Distinguish between a "day" order and an "open" order.
7. Define an odd-lot order.
8. Discuss the function of the odd-lot broker.
9. Explain the odd-lot differential.
10. Is the odd-lot differential in lieu of or an addition to the brokerage commission?
11. Discuss the significance of odd-lot trading to the small investor.
12. Name three bases of delivery upon which a security may be sold.
13. On what day is a security deliverable if sold on Thursday (a) on a cash basis and (b) regular delivery?
14. What is meant by "delayed" delivery?
15. How is title passed in the sale of bonds and of stocks?
16. Name three implied guarantees in the transfer of a negotiable instrument.
17. What is meant by a "buy-in"?
18. Account for the differential in the price of a registered and a coupon bond of the same issue.
19. What is the purpose of a margin purchase?
20. What is meant by "margin"?
21. Distinguish between the buyer's "equity" and "debit balance."
22. Explain the source of the funds lent by the broker.
23. Distinguish between the initial and the maintenance margin.
24. What is meant by "short selling"?
25. Describe the restrictions placed on a short sale by the S.E.C.
26. Describe the completion of a short sale.
27. Distinguish between stock lending "and interest," "flat," and "at a premium."
28. What is meant by "covering a short sale"?
29. What is meant by a "stop" order?
30. Explain the use of a "stop" order.
31. When does a "stop" order become a "market" order?
32. What is meant by a "specialist"?
33. What is the significance of the specialist?

34. Define an option.
35. Explain the basic principle of the option.
36. Where is the market in options?
37. Distinguish between a "put" and a "call."
38. Indicate the period for which an option is valid.
39. Distinguish between an option priced "at the market" and one priced "away from the market."
40. Discuss the economic function of options.
41. Distinguish between "accumulation" and "distribution."
42. Define arbitrage.
43. Distinguish between an arbitrage and a quasi-arbitrage.
44. What is meant by a "special offering"?
45. Discuss the factors considered by the Exchange in approving a special offering
46. What is meant by a "secondary distribution"?
47. Discuss the advantages of a secondary distribution to the seller and to the buyers
48. Under what conditions may Exchange member firms participate in a secondary distribution?
49. Discuss the importance of Exchange member firms to a successful secondary distribution.

### Assignment

- (a) Indicate the day of delivery of a stock sold "regular way" on Wednesday, May 3; on Friday, May 5; on Saturday, May 6, and on Tuesday, July 2.
- (b) Interpret the nature of the following order received by a broker: "Buy 80 shares of Continental Can common at 38."
- (c) Indicate the initial margin required by the New York Stock Exchange under the requirements in effect July 5, 1945, to January 19, 1946, on the following purchases: 100 shares at 5; 100 shares at 15; 100 shares at 30; 20 shares at 50; 100 shares at 60.
- (d) Indicate the initial margin required under the requirements in effect July 5, 1945, to January 19, 1946, on a purchase of 100 shares of Sun Oil Company common at  $51\frac{3}{4}$ . Below what price would the stock have to decline before additional margin would be required?
- (e) Explain the following quotation from *The Wall Street Journal*: "There was a small demand for stocks in the loan crowd on the New York Stock Exchange, Monday, May 22. Clearing House stocks loaning at a 'premium' or 'and interest' were Eastman Kodak common, J. C. Penney common, and Westinghouse Electric common, each at a premium of \$1 per 100 shares. All other Clearing House stocks were flat."
- (f) Broker A sells 50,000 shares of common stock for Mr. Smith through a special offering on the New York Stock Exchange at \$45 a share with 70 cents commission. Broker B buys 500 shares for Mr. Jones, a client. Indicate (without computation) the amount paid by Mr. Smith to Broker A; the amount paid by Mr. Jones to Broker B; the net proceeds to Mr. Smith; the profit to Broker B.
- (g) A special offering of 15,000 shares of common stock is made at 52 with  $\frac{2}{5}$  of a point commission. Total bids aggregating 22,450 shares are received. Determine the rate of allotment.

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## CHAPTER SIX

### INVESTMENT MATHEMATICS

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**Market price of bonds.** The market price of a bond is quoted in terms of a percentage of principal amount. A price of 84 on a bond means 84 per cent of the principal amount (\$1,000) or \$840. Corporate bond prices are quoted in terms of eighths of a point. A quotation of  $92\frac{1}{8}$  means a price of \$921.25 ( $92\frac{1}{8}$  per cent of \$1,000). United States Treasury bonds are quoted in terms of thirty-seconds of a point. A quotation of 110.17 on a United States Treasury bond means \$1,105.31 ( $110\frac{1}{32}$  per cent of \$1,000). Serial bonds are frequently quoted on the basis of the rate of income return instead of the percentage of the principal amount. For example, a quotation of 2.75 bid and 2.50 asked means that buyers are offering to pay a price that would afford a rate of income return of  $2\frac{3}{4}$  per cent annually, whereas sellers are offering to sell at a price that would afford a rate of income return of  $2\frac{1}{2}$  per cent annually.

**Discount and premium bonds.** Bond prices are referred to as “at a discount” or as “at a premium.” A bond quoted at  $92\frac{1}{2}$  is selling “at a discount” in that it is selling below its principal amount (\$1,000). The discount is measured as the difference between the principal amount (\$1,000) and the market price (\$925), or, in this instance, \$75. On the other hand, a bond quoted at  $105\frac{3}{8}$  is selling “at a premium” in that it is selling above its principal amount (\$1,000). The premium is measured as the difference between the market price (\$1,053.75) and the principal amount (\$1,000), or, in this instance, \$53.75.

**“And interest” basis.** Bonds are quoted on an “and interest” basis; that is, the buyer pays to the seller both the price agreed upon and accrued interest. If the interest on a bond is paid January 1 and July 1 and the bond is bought on May 15, interest has accrued since January 1, when the last interest payment was made. The buyer will receive the next semi-annual interest pay-



ment on the succeeding July 1. His capital, however, will have been invested only since May 17, the date on which he paid for the bond; hence he is not entitled to interest for the entire six-months period. On the other hand, the seller has had his capital invested in the bond up to the time of delivery and hence is entitled to interest for that period. The issuer of the bond, however, is not interested in, nor, as a practical matter can it take cognizance of, the relative periods of investment by the buyer and the seller. The issuer will pay the interest on July 1 either to the person in whose name the bond is registered, if it is a registered bond, or to the person presenting the appropriate coupon if it is a coupon bond. In either case, the person involved is the buyer. The buyer, instead of waiting until July 1 to reimburse the seller for the latter's share of the interest, pays the seller the accrued interest at the time of delivery and is himself reimbursed at the next interest payment date. In the event that interest is not paid at the next interest payment date, however, the buyer may not recover from the seller the accrued interest paid to the seller at the time of purchase, but must endeavor to collect from the issuer of the bond.

The interest to which the seller is entitled accrues up to, but not including, the day of delivery.<sup>1</sup> For example, a 4 per cent bond (principal amount \$1,000) with interest payable January 1 and July 1, bought on Tuesday, June 20, is deliverable on Friday, June 23. The interest accrues up to but not including June 23. The calculation of the accrued interest is as follows:

\$1,000 at 4% for 5 months . . . . .	\$16 6667
\$1,000 at 4% for 22 days . . . . .	2.4444
Total Accrued Interest . . . . .	<u>\$19.1111</u>

In the instance of a bond sold on a "delayed delivery" basis and quoted  $85\frac{1}{4}$  "S7F," the seller has the option of making delivery within seven days. Accrued interest, however, does not accrue up to the day of actual delivery but rather to the day of delivery "regular way." For example, if the 4 per cent bond mentioned above were sold on Tuesday, June 20, on a delayed delivery basis, the interest would accrue up through Thursday, June 22, even though delivery may not be made until later.

*Flat.* The price on a bond that is in default in the payment of interest or on which interest is a contingent charge (an income

<sup>1</sup> Accrued interest is calculated on a 30-day month, 360-day year, except in the instance of certain United States Government bonds on which the exact number of days falling within the interest period is used. See Chapter Nine.

## BOND INTEREST TABLE

INTEREST ON \$1,000 FROM ONE DAY TO SIX MONTHS

<i>Days</i>	<i>2 Per Cent</i>	<i>3 Per Cent</i>	<i>4 Per Cent</i>	<i>5 Per Cent</i>	<i>6 Per Cent</i>
1 . . .	\$0 0555	\$0 0833	\$0 1111	\$0 1389	\$0.1667
2 . . .	0 1111	0 1667	0 2222	0 2778	0.3333
3 . . .	0 1667	0 2500	0 3333	0 4167	0.5000
4 . . .	0 2222	0 3333	0 4444	0.5556	0.6667
5 . . .	0 2778	0.4167	0 5555	0 6944	0.8333
6 . . .	0 3333	0.5000	0 6667	0 8333	1.0000
7 . . .	0 3889	0.5833	0 7778	0 9722	1.1667
8 . . .	0 4444	0.6667	0 8889	1 1111	1.3333
9 . . .	0 5000	0 7500	1.0000	1 2500	1 5000
10 . . .	0 5555	0 8333	1 1111	1 3889	1.6667
11 . . .	0 6111	0.9167	1 2222	1 5278	1.8333
12 . . .	0 6667	1.0000	1.3333	1.6667	2.0000
13 . . .	0 7222	1.0833	1 4444	1 8055	2.1667
14 . . .	0 7778	1 1667	1 5555	1 9444	2.3333
15 . . .	0 8333	1.2500	1.6667	2 0833	2 5000
16 . . .	0.8889	1 3333	1 7778	2 2222	2.6667
17 . . .	0.9444	1 4167	1 8889	2 3611	2 8333
18 . . .	1 0000	1.5000	2.0000	2.5000	3.0000
19 . . .	1.0555	1 5833	2.1111	2 6389	3.1667
20 . . .	1.1111	1 6667	2 2222	2.7778	3.3333
21 . . .	1.1667	1.7500	2 3333	2.9167	3.5000
22 . . .	1 2222	1 8333	2 4444	3.0555	3.6667
23 . . .	1.2778	1 9167	2 5555	3.1944	3.8333
24 . . .	1.3333	2 0000	2 6667	3.3333	4.0000
25 . . .	1 3889	2.0833	2 7778	3.4722	4.1667
26 . . .	1 4444	2 1667	2.8889	3.6111	4.3333
27 . . .	1.5000	2 2500	3 0000	3.7500	4.5000
28 . . .	1 5555	2.3333	3 1111	3 8889	4.6667
29 . . .	1.6111	2 4167	3 2222	4.0278	4.8333
30 . . .	1.6667	2.5000	3.3333	4.1667	5.0000
<i>Months</i>					
1 . . .	1.6667	2.5000	3 3333	4 1667	5.0000
2 . . .	3.3333	5 0000	6 6667	8 3333	10.0000
3 . . .	5.0000	7 5000	10 0000	12 5000	15 0000
4 . . .	6 6667	10 0000	13.3333	16 6667	20.0000
5 . . .	8 3333	12.5000	16 6667	20 8333	25 0000
6 . . .	10 0000	15.0000	20 0000	25.0000	30 0000

bond) is usually quoted "flat"; that is, accrued interest is not added to the price. For example, the complete price of a bond (principal amount \$1,000) quoted at 42 and selling "flat" is \$420. The price of \$420 includes any interest payment that may be anticipated at the time of sale.<sup>2</sup>

**Yield on bonds.** In view of the fact that the buyer of a bond purchases the bond for the purpose of receiving both a return in

<sup>2</sup> Effective July 1, 1944, the following bonds previously selling "flat" were traded on an "and interest" basis: Erie Railroad general mortgage income 4½'s of 1915; Gulf, Mobile & Ohio Railroad general mortgage income 5's of 1915; Wabash Railroad general mortgage income 4's of 1981 and 4½'s of 1991.

the form of semi-annual interest payments during the life of the bond and the repayment of the principal at maturity, the price of the bond alone is not the sole criterion of its value. A 5 per cent bond maturing in five years and selling at 105 is not cheaper than a similar bond maturing in twenty years and selling at  $110\frac{3}{4}$ , since the former yields 3.9 per cent compared to 4.2 per cent for the latter. The investor is more concerned with the relationship between his current investment and the return on the investment, which is called yield and is expressed as a percentage.

**Nominal and current yield.** Yield on a bond may be expressed as nominal yield, current yield, and net yield to maturity. In a 4 per cent bond due in ten years and purchased at 90, the nominal yield is 4 per cent, meaning that the issuer pays interest at the annual rate of 4 per cent on the principal amount (\$1,000). This, however, does not represent the real yield to the buyer, since the \$40 annual interest which he receives is on an investment of only \$900. The current yield, on the other hand, gives recognition to the relationship between the dollars of interest received, in this case \$40, and the dollars of investment, in this case \$900. In this instance, the current yield to the investor is 4.44 per cent.

**Net yield to maturity.** The current yield, in turn, ignores other pertinent features of the investment. In the first place, the bondholder's return also involves the repayment at maturity of the principal of \$1,000, which will be \$100 more than he invested. The appreciation in value of a bond purchased at a discount which takes place between the purchase date and the maturity date is called "accumulation" and is measured as the difference between the principal amount and the purchase price. On the other hand, if the bond is purchased at 106, the bondholder will receive \$1,000 at maturity in repayment of the principal, or \$60 less than he invested. The depreciation in the value of a bond purchased at a premium, which occurs between the purchase date and the maturity date, is called "amortization" and is measured as the difference between the purchase price and the principal amount. In order, therefore, to give full consideration to (a) the dollars received in annual interest payments, (b) the accumulation or amortization, and (c) the number of years the bond will run to maturity, yield is usually expressed as "net yield to maturity."

**Approximate method.** Net yield to maturity may be calculated either by the approximate method or by reference to a bond table.

The holder of a 4 per cent bond due in ten years and purchased at 90 will receive \$40 annually as interest. At maturity he will receive \$1,000, or \$100 more than he invested. This accumulation of \$100 (\$1,000 - \$900), however, occurs during the life of the bond or at an average annual rate of \$10 (\$100/10 years). As a result, his average annual return is \$50 (\$40 + \$10). The bondholder's initial investment is \$900. In view of the annual accumulation, however, his investment increases each year by \$10. His investment is \$910 at the beginning of the second year and \$990 at the beginning of the tenth year. As a result, his average annual investment is \$945 (\$900 + \$990 or \$1,890/2). An average annual return of \$50 on an average annual investment of \$945 affords an average annual yield of 5.291 per cent. The rising investment and the corresponding decrease in yields is illustrated in the following table:

<i>Year</i>	<i>Cost</i>	<i>Annual Interest</i>	<i>Accumulation</i>	<i>Total Interest</i>	<i>Yield (%)</i>
1 . . .	\$900	\$40	\$10	\$50	5.55
2 . . .	910	40	10	50	5.49
3 . . .	920	40	10	50	5.43
4 . . .	930	40	10	50	5.37
5 . . .	940	40	10	50	5.31
6 . . .	950	40	10	50	5.26
7 . . .	960	40	10	50	5.20
8 . . .	970	40	10	50	5.15
9 . . .	980	40	10	50	5.10
10 . . .	990	40	10	50	5.05
Average yield . . .					5.291%

Similarly, the holder of a 4 per cent bond due in ten years and purchased at 106 will receive \$40 annually as interest. At maturity he will receive \$1,000, or \$60 less than he invested. This loss of \$60 (\$1,060 - \$1,000), however, occurs during the life of the bond, or at an average annual rate of \$6 (\$60/10 years). As a result the average annual return is \$34 (\$40 - \$6). The bondholder's initial investment is \$1,060. In view of the annual amortization, however, his investment decreases each year by \$6. His investment is \$1,054 at the beginning of the second year and \$1,006 at the beginning of the tenth year. As a result, his average annual investment is \$1,033 (\$1,060 + \$1,006 or \$2,066/2). An average annual return of \$34 on an average annual investment of \$1,033 affords an average annual yield of 3.291 per cent. The decreasing value of the investment and the corresponding increase in yield is illustrated in the following table:

<i>Year</i>	<i>Cost</i>	<i>Annual Interest</i>	<i>Amorti- zation</i>	<i>Net Interest</i>	<i>Yield (%)</i>
1 . . .	\$1060	\$40	\$6	\$34	3 20
2 . . .	1054	40	6	34	3 22
3 . . .	1048	40	6	34	3 24
4 . . .	1042	40	6	34	3.26
5 . . .	1036	40	6	34	3.28
6 . . .	1030	40	6	34	3 30
7 . . .	1024	40	6	34	3 32
8 . . .	1018	40	6	34	3 34
9 . . .	1012	40	6	34	3 36
10 . . .	1006	40	6	34	3 38
Average yield . . .					3.291%

**Bond table.** The most common method of determining the net yield to maturity on a bond is by reference to a standard bond table such as the Rollins tables (Bond Values, Montgomery Rollins), Sprague tables (Complete Bond Tables, Charles E. Sprague) or Johnson tables (Bond Yields, D. C. Johnson and others). The Rollins tables show the value to the nearest cent of a bond for \$100, bearing interest at the rates of 2,  $2\frac{1}{2}$ , 3,  $3\frac{1}{2}$ , 4,  $4\frac{1}{2}$ , 5, 6, and 7 per cent and yielding from 2 to 7 per cent. The Sprague tables show the value, to the nearest cent, of a bond for \$1,000,000, bearing interest from 3 to 7 per cent and yielding from  $1\frac{1}{4}$  to 10 per cent. The Johnson tables show the yields obtainable from bonds of standard denominations, maturities, and interest rates.

*Basis of bond table.* A bond table is based on the assumption that a bond buyer is purchasing the present net worth of the face of the bond and the present value of the interest coupons discounted according to the various maturities. The present net worth of the principal of the bond at maturity is not determined by the interest rate the bond bears but, rather, by the prevailing rate of income return on similar securities. The present worth of the right to receive \$1,000 in 15 years is determined by compound discount and is equivalent to the amount that accumulates to \$1,000 in 15 years at compound interest at the prevailing rate of income return. It is the value of the principal today, compound discounted to the date of maturity at the interest rate the investment yields. The present worth of the coupons depends upon the aggregate amount of the payments, each of which is determined by the nominal interest rate, compound discounted at the yield rate to the present day. In most bonds with a maturity of over twelve years and in all bonds with a maturity of over twenty years, the present worth of the coupons exceeds the present worth of the principal. The more distant the

maturity, the less valuable is the present worth of the principal of the bond.

*Uses of bond table.* The problems most frequently arising in connection with bond investment are either to determine the net yield of a bond when the price, coupon rate, and maturity date are known, or to determine the price at which a bond of a known coupon rate and maturity should sell to give a desired yield. In either case, the answer is found by reference to the bond table. For example, in the discount bond mentioned above (4 per cent bond, maturing in ten years and purchased at 90), reference to the bond table shows a net yield of 5.3013 per cent and in the premium bond (4 per cent bond, maturing in ten years and purchased at 106) a yield of 3.2909 per cent.

*Interpolation.* Bond tables, however, are not complete in the sense that they give the net yield on every amount invested at every possible rate of interest for every possible maturity. Such a compilation is impracticable. The exact yield (or price) in many instances must be determined by interpolation. For example, the bond table does not give the yield for a 4 per cent bond due in ten years and selling at 90. It does report yields of 5.30 per cent at a price of 90.01 and of 5.375 per cent at a price of 89.47. The yield at the price of 90 is somewhere between 5.30 per cent and 5.375 per cent. The interpolation of these yields shows the exact yield at 90 to be 5.3013 per cent, which is determined as follows:

Price	Yield
90.01 . . . . .	5.30
90.00 . . . . .	5.30 } $X$
89.47 . . . . .	5.375

The difference between the yield of 5.30 per cent at 90.01 and at 90 is the unknown and is determined by proportion.

$$\frac{.01(90.01 - 90.00)}{.54(90.01 - 89.47)} = \frac{X}{.075(5.375 - 5.30)}$$

$$.54 X = .01 \times .075$$

$$X = .0013$$

Since the difference between the yield at 90.01 and at 90.00 is .0013, the yield at 90 is 5.3013 per cent.

*Constant period rate.* Bond tables give the nominal annual rate realized by the investor if the bond is bought at the price designated in the table. If, therefore, the bond is held to maturity, one half of the designated annual rate shown in the table, or arrived at by interpolation, is the constant-period rate realized on a changing book value. Calculation of the yield by the approximate method

## BOND TABLE

10 YEARS, INTEREST PAYABLE SEMI-ANNUALLY

*Bonds Bearing Interest at the Rate of*

<i>Net per Annum</i>	6%	5½%	5%	4½%	4¼%	4%	3½%
3	125 75	121 46	117 17	112 88	110.73	108 58	104 29
3 10	124 77	120 50	116.23	111 96	109.82	107 69	106 42
3 ⅛	124 53	120 26	116.00	111.73	109 60	107.47	103 20
3 20	123 80	119.65	115.30	111 05	108 93	106 80	102 55
3 ¼	123 32	119 08	114.84	110 60	108 48	106 36	102 12
3 30	122 84	118 61	114.38	110 15	108.04	105 92	101 69
3 ⅜	122.12	117 91	113.70	109 48	107 37	105 27	101 05
3.40	121 89	117 68	113.47	109 26	107 15	105 05	100 84
3 ½	120 94	116.75	112.56	108 38	106 28	104 19	100 00
3.60	120.01	115.84	111.67	107 50	105 42	103 33	99 17
3 ⅝	119 77	115 61	111.45	107 28	105 20	103 12	98 96
3.70	119 08	114 93	110.78	106 64	104.56	102 49	98 34
3 ¾	118.62	114.48	110 34	106.21	104.14	102 07	97 93
3 80	118 16	114 03	109 91	105.78	103.71	101 65	97 52
3 ⅞	117.48	113 37	109.25	105 14	103 08	101.03	96 92
3.90	117.25	113 14	109.04	104 93	102 88	100.82	96 71
4	116.35	112 26	108 18	104 09	102.04	100 00	95 91
4.10	115.46	111.39	107.32	103.25	101 22	99.19	95.12
4 ⅛	115 24	111.17	107.11	103.05	101.02	98 98	94 92
4.20	114.58	110.53	106.48	102 43	100 40	98.38	94 33
4 ¼	114 14	110.10	106.06	102 02	100.00	97.98	93.94
4 30	113.70	109.67	105 64	101 61	99.60	97 58	93 55
4 ⅜	113.05	109 03	105 02	101.00	99.00	96 99	92 97
4.40	112.83	108 82	104.81	100 80	98 80	96 79	92 78
4 ½	111 97	107 98	103 99	100 00	98.00	96 01	92 02
4.60	111.12	107.15	103 18	99.21	97.22	95.23	91 26
4 ⅝	110.91	106 94	102.98	99 01	97.02	95 04	91 07
4.70	110 28	106 32	102.37	98 42	96.44	94.47	90.51
4 ¾	109 86	105 92	101.97	98 03	96.06	94.08	90.14
4.80	109.44	105.51	101.57	97 64	95 67	93.71	89 77
4 ⅞	108.82	104.90	100.98	97 06	95.10	93 14	89.22
4 90	108.61	104.70	100.78	96 87	94.91	92.95	89.04
5	107.79	103.90	100.00	96.10	94 15	92.21	88 31
5.10	106.98	103 10	99.22	95 35	93.41	91 47	87 59
5 ⅛	106.78	102 91	99.03	95.16	93 22	91.28	87.41
5.20	106.18	102.32	98.46	94 59	92.66	90.73	86.87
5 ¼	105.78	101 93	98.07	94.22	92.30	90.37	86.52
5.30	105.38	101.54	97.69	93.85	91.93	90 01	86 17
5 ⅝	104.79	100.96	97 13	93.30	91 38	89 47	85 64
5.40	104.59	100.77	96.94	93.12	91.20	89.29	85 47
5 ¾	103.81	100.00	96.19	92.19	90.48	88 58	84.77

assumes that the book value increases or decreases by equal amounts annually. Inasmuch, however, as it is customary to adjust the book value upon the receipt of each interest payment, the book value actually changes semi-annually. If the bond account is kept scientifically, the rate of return remains constant but the gain or loss in book value varies from period to period. For example, if a \$1,000 principal value bond bearing annual interest at the rate of 4 per cent

payable January 1 and July 1 and due July 1, 1951, is bought on January 1, 1948, at 104, the yield is 2.7924 per cent, or a constant semi-annual return of 1.3962 per cent. The changing net interest and amortization charges are as follows:

<i>Date</i>	<i>Total Interest Received <sup>a</sup></i>	<i>Net Income <sup>b</sup></i>	<i>Amorti- zation</i>	<i>Book Value</i>
1948, Jan. 1 . . .				1,040 00
July 1 . . .	\$20	\$14 52	\$5 48	1,034 52
1949, Jan. 1 . . .	20	14 44	5.56	1,028 96
July 1 . . .	20	14 37	5.63	1,023 33
1950, Jan. 1 . . .	20	14 29	5 71	1,017 62
July 1 . . .	20	14 21	5 79	1,011 83
1951, Jan. 1 . . .	20	14 13	5 87	1,005.96
July 1 . . .	20	14.04	5 96	1,000.00
	<u>\$140</u>	<u>\$100.00</u>	<u>\$40.00</u>	

<sup>a</sup> 4 per cent on \$1,000 principal value.

<sup>b</sup> 2.7924 per cent on book value.

The approximate yield rate per period is calculated as follows: the average loss of value of the bond per period is \$5.714 ( $\$40/7$ ). The book value for the first period is \$1,040 and the approximate book value for the last period is \$1,005.714. As a result, the average book value is \$1,022.857 ( $\$1,040 + \$1,005.714 = \$2,045.714/2$ ). Since the average net interest realized is \$14.286 ( $\$20 - \$5.714$ ), the approximate yield rate per period is .013966 per cent ( $\$14.286/\$1,022.857$ ) and the annual rate is 2.793 per cent ( $.013966 \text{ per cent} \times 2$ ).

On the other hand, if a \$1,000 principal value bond bearing annual interest at the rate of 4 per cent payable January 1 and July 1 and due July 1, 1949, is bought on January 1, 1947, at \$980.90, the yield is 4.82 per cent. The bondholder will receive \$1,000 at maturity, or an accumulation of \$19.10 ( $\$1,000 - \$980.90$ ) or an average per period of \$3.82 ( $\$19.10/5$ ). The book value during the first period is \$980.90 and during the last period \$996.18 ( $\$1,000 - \$3.82$ ), or an average of \$988.54 ( $\$980.90 + \$996.18 = \$1,977.08/2$ ). As a result, the approximate yield rate per period is 2.4096 per cent ( $\$23.82/\$988.54$ ) or 4.8192 per cent annually.

When the number of periods remaining in the life of the bond is small, the approximate method, using periods, gives the yield rate correct to four decimal places. In the case just considered, the correct yield rate was 4.82 per cent and the approximate yield rate was 4.8192 per cent. If the bond account is kept scientifically, the accumulation of value varies from \$3.64 for the first interest period to \$4.00 for the last period, but the net income or total interest



realized on the changing book value is always 2.41 per cent per period, as indicated by the following table:

<i>Date</i>	<i>Total Interest Received <sup>a</sup></i>	<i>Net Income <sup>b</sup></i>	<i>Accumulation</i>	<i>Book Value</i>
1947, Jan. 1 . .				\$980 90
July 1 . . .	\$20	\$23 64	\$3.64	984 54
1948, Jan 1 . . .	20	23 73	3 73	988 27
July 1 . . .	20	23 82	3 82	992 09
1949, Jan 1 . . .	20	23 91	3 91	996 00
July 1 . . .	20	24 00	4.00	1000.00
	<u>\$100</u>	<u>\$119.10</u>	<u>\$19.10</u>	

<sup>a</sup> 4 per cent on principal value

<sup>b</sup> 4 82 per cent on book value

**Callable bonds.** The calculation of the net yield on a bond that is callable for redemption prior to maturity presents the problem of determining the date to be used. Inasmuch as the redemption option rests with the issuer, it is reasonable to assume that the option will be exercised when market conditions are favorable to the issuer. In the instance of a redeemable bond purchased at a discount from the call price, the final date of payment is considered as the date of maturity. This is on the theory that so long as the market price is less than the call price, any retirement program inaugurated by the issuer will be by open-market purchase rather than by call for redemption. On the other hand, when purchased at a premium above the call price, the earliest possible call date is taken as the date of maturity. For example, in a 4 per cent bond, due in 1965 and callable beginning 1950 at 105, the net yield is calculated to 1965 if purchased at 102 and to 1950 if purchased at 110.

**Market price of stocks.** The market price of a stock is quoted directly in dollars per share. A price of 84 for a stock means \$84 a share. The quotation on a listed stock refers to the last price at which a transaction in the trading unit of the stock was completed. In the instance of an unlisted stock, the quotation is usually in the form of bid and asked prices. A quotation on a stock of "bid: 85; asked: 86" means that the best price which buyers are willing to pay is 85, or \$85 a share, and the best price for which sellers are willing to sell is 86, or \$86 a share. Stock prices are quoted in terms of eighths of a point. A quotation of  $85\frac{1}{8}$  for a stock means \$85.125 a share.

**Flat.** Stock prices are quoted "flat"; that is, the price quoted includes any possible accrued dividend, in contrast to the quotation on a bond, which excludes accrued interest. The market price of a stock is influenced in part by the declaration or expected declaration

of a dividend. Dividend distributions involve consideration of the declaration date, the record date, and the payment date. For example, Company A declares a dividend of fifty cents a share on the common stock payable on November 15, to stockholders of record on Friday, October 30. Since buyers of the stock prior to the record date are entitled to receive the current dividend, the price reflects the dividend. On the other hand, since stock purchased after the record date does not entitle the holder to the current dividend, the stock sells "ex-dividend" and the market price tends to decline by the amount of the dividend.

*Ex-dividend.* The "ex-dividend" date, under New York Stock Exchange rules, is the second full business day preceding the date fixed as the record date, or the date on which the transfer books are to be closed, as the case may be. The rule provides that:

Transactions in shares shall be ex-dividend on the second full business day preceding the record date as fixed by the corporation or on the day of the closing of transfer books therefor, except transactions therein made specifically for "cash." Should such record date or such closing of transfer books occur upon a holiday or half-holiday observed by the Exchange, this rule shall apply for the third preceding full business day. The Committee on Securities may, however, in any particular case, direct otherwise.

Since the record date of October 30 in the instance of Company A is a Friday, the stock goes "ex-dividend" on Wednesday, October 28. On the other hand, Company B also declares a dividend but with Saturday, October 31, as the record date. Inasmuch as October 31 is a Saturday, a half-holiday, the stock goes "ex-dividend" on Wednesday, October 28.

**Yield on stocks.** The yield on a stock represents the relation between the dividend income and the cost price of the stock. For example, a preferred stock paying \$7 annual dividend and purchased at \$170 affords a yield to the buyer of 4.1 per cent ( $\$7/\$170$ ). In like manner, a common stock paying a dividend at the annual rate of \$6 and purchased at \$120 gives a yield of 5 per cent ( $\$6/\$120$ ).

In view of the fact that the dividend on stock is contingent upon earnings and the discretion of the directors, the calculation of yield is not as significant as the yield on a bond. The calculation of yield on a preferred stock, however, is more justified than on a common stock. Dividend rates on preferred stocks are fixed in time and amount and therefore provide a more dependable basis for the calculation. On the other hand, dividend payments on common stocks are subject to change and, in the instance of even the largest

corporations, have been increasingly irregular in amount during the economic disturbances of recent years.

Since the yield on a stock depends upon two variables, it may not be the same to all investors in the stock or to the same investor for an extended period. A stock paying a current dividend at an annual rate of \$5 affords a yield of 5 per cent to the buyer at \$100 but only 4.55 per cent to the buyer at 110. On the other hand, the buyer at \$100 obtains a yield of 5 per cent only so long as the dividend continues at that rate. If the rate were later reduced to \$4, the buyer at \$100 would receive a current yield of only 4 per cent.

**Cost of security purchase.** The total cost to the buyer of a bond involves the price, accrued interest, and broker's commission. The purchase on Monday, February 24, at  $116\frac{1}{8}$  of a 4 per cent bond due in 1995, interest payable May 1 and November 1, would cost the buyer \$1,179.14, computed as follows:

Principal: 1 bond at \$1,161.25 . . . . .	\$1,161.25
Accrued interest:	
3 months at 4% . . . . .	\$10.0000
26 days at 4% . . . . .	<u>2.8889</u>
	12.89
Commission: 1 bond at \$5 . . . . .	5 00
Total cost . . . . .	<u>\$1,179.14</u>

The minimum commission rates per \$1,000 of principal on long-term bonds as established by the New York Stock Exchange are:

<i>Price per \$1,000 of Principal</i>	<i>1 or 2 Bonds</i>	<i>3 Bonds</i>	<i>4 Bonds</i>	<i>5 or More Bonds</i>
Less than \$10 . . . . .	\$1.50	\$1.20	\$ .90	\$ .75
\$10 and over but under \$100 . . . . .	2 50	2 00	1.50	1 25
\$100 and over . . . . .	5 00	4 00	3.00	2.50

In addition, the Exchange has set up certain special commission rates:

a. On bonds of the United States, Puerto Rico, Philippine Islands and States, territories and municipalities, such rate as may be mutually agreed upon.

b. On bonds which mature in less than six months, or are to be redeemed by call or otherwise in less than six months, and are selling at not less than 96 per cent and not more than 110 per cent of their redemption price, such rate as may be mutually agreed upon.

c. On bonds which will mature in not less than six months and not more than five years, or are to be redeemed by call or otherwise in not less than six months and not more than twelve months, and are selling at not less than 96 per cent and not more than 110 per cent of their redemption price, the minimum rate is \$2.50 on one or two bonds, \$2 on three bonds, \$1.50 on four bonds, and \$1.25 on five or more bonds.

The total cost to the buyer of stock involves the price and the broker's commission. The purchase of 100 shares (\$100 par) at \$65 per share would cost the buyer \$6,528.75, computed as follows:

Price: 100 shares at \$65 . . . . .	\$6,500 00
Commission: 100 shares at \$.28 $\frac{1}{2}$ . . . . .	28.75
Total cost . . . . .	<u>\$6,528 75</u>

The minimum commission rates on stocks, rights, and warrants (except called stocks) as established by the New York Stock Exchange are:

(On stocks selling at 50 cents a share and above\*)

<i>Price per Share</i>	<i>Rate per Share</i>
50¢ and above but under \$1 . . . . .	4¢
\$1 and above but under \$2 . . . . .	6
\$2 and above but under \$3 . . . . .	7
\$3 and above but under \$4 . . . . .	8
\$4 and above but under \$5 . . . . .	9
\$5 and above but under \$6 . . . . .	10
\$6 and above but under \$7 . . . . .	11
\$7 and above but under \$8 . . . . .	12
\$8 and above but under \$9 . . . . .	13
\$9 and above but under \$10 . . . . .	14
At \$10 . . . . .	15
Above \$10 but under \$90 . . . . .	The 15¢ base rate plus $\frac{1}{4}$ of 1 per cent of the price per share above \$10 *
\$90 and above . . . . .	35

\* For stocks selling above \$10 but under \$90, the per-share rate may be computed as 12 $\frac{1}{2}$ ¢ plus  $\frac{1}{4}$  of 1 per cent of the price per share

(On stocks selling below 50 cents per share:)

<i>Price per Share</i>	<i>Rate per Share</i>
$\frac{1}{2}$ of \$1 . . . . .	0.1 ¢
$\frac{1}{3}$ of \$1 . . . . .	0.15
$\frac{1}{4}$ of \$1 and above but under $\frac{2}{3}$ of \$1 . . . . .	0.5
$\frac{2}{3}$ of \$1 . . . . .	0.5
Over $\frac{2}{3}$ of \$1 but under $\frac{3}{4}$ of \$1 . . . . .	1.0
$\frac{3}{4}$ of \$1 and above but under $\frac{1}{2}$ of \$1 . . . . .	2.0

The schedule established by the Exchange provides, however, for certain minimum commissions:

<i>Amount Involved</i>	<i>Minimum Commission</i>
Less than \$10 . . . . .	Mutually agreed
\$10 and above but under \$50 . . . . .	6 per cent of such amount or \$1, whichever is greater.
\$50 and above but under \$100 . . . . .	\$4 or the rate per share, whichever is greater.
\$100 and above . . . . .	\$5 or the rate per share, whichever is greater.

**Net proceeds of security sale.** The net proceeds to the seller of a bond involve the price, accrued interest, broker's commission, federal transfer tax, and Securities and Exchange Commission registration fee. The sale on February 24 at 116 $\frac{1}{8}$  of a 4 per cent bond, due in 1995, interest payable May 1 and November 1, would net the seller \$1,168.61, computed as follows:

## INVESTMENT ANALYSIS

Principal: 1 bond at \$1,161.25 . . . . .		\$1,161.25
Accrued interest: 3 months at 4% . . . . .	\$10 000	
26 days at 4% . . . . .	<u>2.889</u>	<u>12 89</u>
		\$1,174 14
Less:		
Commission: 1 bond at \$5 . . . . .	\$ 5 00	
Federal transfer tax: . . . . .		
1 bond at 50 cents . . . . .	50	
S E.C. registration fee . . . . .	<u>.03</u>	<u>5 53</u>
		\$1,168.61

The seller is entitled to the agreed price for the bond and the accrued interest. The proceeds from the sale are reduced, however, by the payment of the broker's commission, the federal transfer tax and the Securities and Exchange Commission registration fee. The federal government imposes a transfer tax on the sale of all bonds except United States and foreign government and municipal bonds. The tax is at the rate of five cents per \$100 of face value, or fifty cents per \$1,000 bond. The transaction is subject also to the Securities and Exchange Commission registration fee. The Securities Exchange Act of 1934 (Section 31) provides:

Every national securities exchange shall pay to the Commission on or before March 15 of each calendar year a registration fee for the privilege of doing business as a national securities exchange during the preceding calendar year or any part thereof. Such fee shall be in an amount equal to one five-hundredths of one per centum of the aggregate dollar amount of the sales of securities transacted on such national securities exchange during the preceding calendar year and subsequent to its registration as a national securities exchange.

This regulation does not apply to:

... securities which are direct obligations of or obligations guaranteed as to principal or interest by the United States or such securities issued or guaranteed by corporations in which the United States has a direct or an indirect interest as shall be designated for exemption from the provisions of this section by the Secretary of the Treasury.

This fee is collected by the New York Stock Exchange from its members at the rate of one cent for each \$500 represented by their transactions. The brokerage commission, the federal transfer tax, and the Commission registration fee are charged to the seller of the security and are withheld by the brokerage firm from the amount credited to the seller.

The seller of stock is entitled to the agreed-upon price for the stock. The proceeds from the sale are reduced, however, by the payment of the broker's commission, the federal transfer tax, the New York State transfer tax, and the Commission's registration fee.

The sale of 100 shares (\$100 par) of stock at \$65 a share would net the seller \$6,461.12, computed as follows:

Price: 100 shares at \$65 . . . . .		\$6,500 00
Less:		
Commission: 100 shares at \$0.28 $\frac{1}{2}$ . . . . .	\$28.75	
Federal transfer tax: 100 shares at \$0.06 . . . . .	6 00	
New York State transfer tax: 100 shares at \$0.04 . . . . .	4 00	
S E C registration fee . . . . .	13	38 88
		<u>\$6,461 12</u>

The federal government imposes a transfer tax on the sale of stock. The rate on stocks having a par value and selling at \$20 a share or above is six cents per \$100 of par value or fraction thereof, and the rate on stocks selling below \$20 a share is five cents per \$100 of par value or fraction thereof. The rate on stocks without par value is six cents a share on stocks selling at \$20 a share or above and five cents a share on stocks selling below \$20 a share.<sup>3</sup>

Some states, including Florida, Massachusetts, New York, Pennsylvania, and South Carolina, also impose a transfer tax on stock transactions if made within the state. New York, for instance, levies a graduated scale as follows: stocks selling under \$5 a share, 1 cent a share; at \$5 but less than \$10 a share, 2 cents; from \$10 to less than \$20 a share, 3 cents a share; above \$20 a share, 4 cents a share. Where no sale is involved, the rate is 2 cents a share. Massachusetts and Pennsylvania levy a transfer tax of two cents per \$100 of par value or fraction thereof in the instance of par value stock, and two cents a share on stocks of no par value.

In security transactions, therefore, a broker's commission is paid by both the buyer and the seller. All federal and state transfer taxes and the Commission's registration fee are paid by the seller.<sup>4</sup> The federal government imposes a transfer tax on bonds and stocks, whereas New York State imposes a transfer tax only on stock.

**Conversion parities.** A convertible bond is one which is convertible at the option of the holder into stock of the company at a fixed ratio. The holder of a convertible bond is faced with three very practical questions: (a) How many shares of stock will be received upon conversion of the bond? (b) Under what conditions

<sup>3</sup> Short sales, regardless of selling price, are subject to a federal tax of five cents per \$100 par value, or five cents per share on no par value stock. This tax is on the borrowing of stock, the reborrowing of which involves an additional charge of the same amount.

<sup>4</sup> In an odd-lot purchase of stock, the odd-lot broker who provides the stock is a seller and, as such, must pay the transfer tax. The odd-lot broker, however, adds this cost to the price paid by the odd-lot buyer. The federal tax is charged on odd lots bought or sold and the state tax on stocks sold.

should the bond be converted? (c) How may the existence of those conditions be determined?

The number of shares of stock the bondholder will receive upon conversion is stated in the bond indenture in terms of a conversion price, which is the value given to the stock for conversion purposes. Phelps Dodge 3½'s of 1952 are convertible at \$50 a share. Regardless of the current market price, the value given to the stock by the corporation for conversion purposes is \$50 a share. Since the corporation gives to the stock a value of \$50 for conversion purposes, the holder of a \$1,000 principal value bond will be entitled to twenty shares (\$1,000/\$50). This relationship (\$1,000/\$50) is the conversion ratio. In order to determine the conversion ratio, therefore, it is necessary to know the conversion price.

The conversion price under the indenture may change in accordance with a specified schedule. For example, one corporate debenture bond provided for the following conversion prices:

	<i>Conversion</i>	
	<i>Price</i>	<i>Ratio</i>
Oct. 1, 1937—Oct. 1, 1942 . . .	\$110	9.09
Oct. 1, 1942—Oct. 1, 1947 . . .	115	8.69
Oct. 1, 1947—April 1, 1952 . . .	120	8.33

If the conversion price results in a fractional share, an adjustment must be made. For example, with a conversion price of 120, the bondholder is entitled to  $8\frac{1}{3}$  shares. The manner of adjusting the fractional share differs with different corporations. The corporation may (a) give a certificate for the full shares (8) and a warrant for the fractional share ( $\frac{1}{3}$ ), which the holder may supplement with sufficient additional warrants ( $\frac{2}{3}$ ) for fractional shares purchased on the market to present for a certificate for a full share; or (b) issue a certificate for the full shares (8) and pay cash for the fractional share ( $\frac{1}{3}$ ); or (c) issue a certificate for nine full shares upon payment by the bondholder for the remaining two-thirds share. The first and second methods are the more common; the third method is seldom used.

Inasmuch as the bondholder in conversion surrenders the bond in exchange for stock, he must consider the respective present values of the two securities. He relinquishes value in the form of the bond and accepts value in the form of stock. Obviously, from the bondholder's standpoint, the only condition under which conversion is warranted is when the bond value is less than the stock value. The usual

method of determining the existence of such condition is by means of parity prices.

*Parity price.* Parity prices refer to the market prices at which conversion of the bond into stock would represent an equal exchange of value. For example, with the conversion price of \$40 and the stock selling at \$50, what is the parity price of the bond? The calculation of the parity price of the bond involves two factors: the conversion ratio and the prevailing market price of the stock. In this case, the conversion ratio is  $\$1,000/\$40$ , or 25 shares. Should the bondholder convert, he would receive 25 shares, each with a current value of \$50, or a total value of \$1,250. Hence, at a market value of 125 for the bond, conversion would result in an equal exchange of value. The parity price of the bond is 125. Conversion would not be warranted unless the bond were selling for less than 125. Thus, if the current market price of the bond were 120, conversion would be advisable, since the bondholder would surrender \$1,200 in bond value and receive \$1,250 in stock value. The parity price of 125 for the bond in this case is true, however, only when the stock is selling at 50. Should the market price of the stock rise to 55, the parity price of the bond would rise to  $137\frac{1}{2}$  (\$1,375). The parity price of the bond changes, therefore, with changes in the market price of the stock.

<i>Stock Price</i>	<i>Parity Price of Bond</i>
40 . . . . .	100
45 . . . . .	$112\frac{1}{2}$
50 . . . . .	125
55 . . . . .	$137\frac{1}{2}$
60 . . . . .	150

The parity price of the stock may be determined in a similar manner. For example, with the conversion price of 40 and the bond selling at 90, what is the parity price of the stock? The calculation of the parity price of the stock involves two factors: the conversion ratio and the prevailing market price of the bond. Should the bondholder convert, he would surrender bond value of \$900 and receive in exchange 25 shares which, at an equal exchange of value, would be worth \$36 a share ( $\$900/25$ ). Hence, at a market price of \$36 a share for the stock, conversion would result in an equal exchange of value. The parity price of the stock is 36. Conversion would not be warranted unless the stock were selling above 36. The parity price of 36 for the stock, however, is true only when the bond is selling at 90. Should the market price of the bond rise to 95, the



parity price of the stock would rise to 38. The parity price of the stock changes, therefore, with changes in the market price of the bond.

<i>Bond Price</i>	<i>Parity Price of Stock</i>
80 . . . . .	32
85 . . . . .	34
90 . . . . .	36
95 . . . . .	38
100 . . . . .	40

In conversion, the bondholder loses the accrued interest on the bond but gains the accrued dividend on the stock. A more exact calculation of conversion parities, however, involves consideration of the differences in the method of quoting bonds and stocks. Since the market price of the bond does not include the accrued interest, whereas the market price of the stock includes the accrued portion of the expected current dividend, it is necessary to put the prices on a common basis. This is accomplished by deducting the accrued current dividend from the market price of the stock. Thus the comparison considers the "and interest" price of the bond and the "and dividend" price of the stock. In the instance of a bond convertible at 40, selling at  $112\frac{1}{2}$  on June 9, and the stock paying a dividend on January 2, April 2, July 2, and October 2 at an annual rate of \$2, the parity price of the stock, calculated as above, is 45. The parity price of 45, however, is an "and dividend" price. Since the accrued dividend for 68 days (April 2 to June 9) is  $37\frac{1}{2}$  cents, the true parity price of the stock is  $44\frac{5}{8}$  ( $\$45 - \$375$ ). If, therefore, on June 9, the stock is selling at  $37\frac{3}{8}$ , the "and dividend" price is  $37(37\frac{3}{8} - \frac{3}{8})$ , and the stock is selling eight points below the conversion point.

**Rights.** Subscription rights arise when the corporation issues additional shares of stock and offers them for sale to the present stockholders. If the corporation were to sell the additional shares directly to the public, the proportionate interest of each of the present stockholders would be reduced. For example, if a stockholder holds 1,000 shares in a corporation having 1,000,000 shares outstanding, he has a  $1/1000$  interest ( $1000/1,000,000$ ). Should the corporation issue and sell to the public an additional 500,000 shares, the interest of the stockholder would be reduced to a  $1/1,500$  interest ( $1,000/1,500,000$ ). Therefore, to enable the present stockholders to protect their proportionate interest in the corporation, the latter usually offers the additional shares to the present stockholders before offering them to the public.

A right may be defined as the privilege possessed by a stockholder to subscribe to a new issue of the stock (a) first before it is offered to the public and (b) in proportion to his present holdings. The subscription price is generally sufficiently below the current market price to induce the stockholders to buy additional shares of the stock.<sup>5</sup> The announcement of rights involves four features: (a) the record date, (b) the basis of subscription, (c) the subscription price, and (d) the expiration date. For example, a company may announce rights on March 30 whereby a stockholder of record on April 6 may subscribe until April 27 to one new share of stock for each ten shares then owned at a subscription price of \$127.50 a share.

*Warrants.* A right attaches itself to one share of old stock; hence a stockholder has as many rights as he has shares of old stock. A holder of ten shares has ten rights and a holder of 100 shares has 100 rights. Rights are received by stockholders in the form of negotiable stock purchase warrants. The warrant is a certificate that sets forth: (a) the amount of new stock to which the stockholder is entitled to subscribe, (b) the subscription price, (c) the terms of payment, and (d) the date of expiration of the privileged subscription. The reverse side of the certificate provides two blank forms, one of which is to be filled out and signed if the stockholder wishes to exercise the subscription privilege, and the other an assignment blank to be used if the stockholder wishes to sell the privilege.

*Market in rights.* A market arises in rights. For example, in the instance of the rights described above, a holder of 10 shares has 10 rights and is entitled to subscribe for one new share. The stockholder may exercise the rights (subscribe for the new stock), or he may sell the rights. A stockholder who owns 5 shares of the old stock has 5 rights, which are insufficient to subscribe to one new share. He may either sell the 5 rights or purchase 5 additional rights in order to obtain sufficient rights to entitle him to subscribe to one new share. Market quotations are made in terms of rights and not in terms of warrants.

*Value of a right.* The value of a right depends upon three factors: (a) the market price of the old stock, (b) the subscription price of

<sup>5</sup> This pre-emptive right is a matter of common law doctrine rather than of statutory enactment. Several states, including New York, have provisions dealing with rights in their general incorporation acts. Other states, such as Indiana and California, eliminate the common law doctrine by specifically providing that no stockholder shall have any pre-emptive right unless that right is reserved in the corporate charter. The pre-emptive right, when recognized, is generally denied to preferred stocks and reserved solely for common stock and applies to newly authorized stock.

the new stock, and (c) the number of rights needed to obtain a warrant to subscribe to one new share. The latter two factors remain constant but the first factor is variable. During the period prior to the record date, the buyer of the old stock is entitled to the right and, as a result, the stock sells "cum rights." A market price of  $167\frac{1}{2}$  for the stock referred to above on March 31, when the stock is selling "cum rights," mathematically includes two factors: the price of the stock as a unit of ownership and the value of one right. The price of the stock as a unit of ownership, therefore, is  $167\frac{1}{2}$  minus the value of one right. If the subscription rights are to be exercised, the stockholder will have to pay  $127\frac{1}{2}$  for a share of the new stock when it is issued. Thus the present stockholder may acquire one additional share for  $127\frac{1}{2}$  instead of the current price of  $167\frac{1}{2}$  and effect a saving measured by the difference between the price of the stock as a unit of ownership ( $167\frac{1}{2}$  minus the value of one right) and the subscription price of  $127\frac{1}{2}$ , which may be expressed as:

$$167\frac{1}{2} - 1 \text{ right} - 127\frac{1}{2}$$

Since it is necessary to have 10 rights to purchase one share at  $127\frac{1}{2}$ , this saving represents the value of 10 rights, and hence the value of one right is one tenth of this saving. Stated in algebraic form, the value of a right may be calculated as follows:

$$10 \text{ rights} = 167\frac{1}{2} - 1 \text{ right} - 127\frac{1}{2}$$

$$11 \text{ rights} = 167\frac{1}{2} - 127\frac{1}{2}$$

$$1 \text{ right} = \frac{167\frac{1}{2} - 127\frac{1}{2}}{11}$$

$$1 \text{ right} = \$3.63$$

The value of a right with a stock selling "cum rights" is usually calculated more directly by the formula:

$$\text{Value of 1 right} = \frac{P}{R + 1}$$

in which  $P$  represents the premium (market price - subscription price) and  $R$  the number of rights needed to subscribe for one share of new stock. In the above case:

$$\text{Value of 1 right} = \frac{40}{10 + 1} = \$3.63$$

When the stock goes "ex-rights" the buyer of the stock is not entitled to the right, which remains with the seller.<sup>6</sup> A market price

<sup>6</sup> The date on which the stock goes "ex-rights" is determined on the same basis as the "ex-dividend" date.

of 162 for the stock after April 6, when the stock is selling "ex-rights," does not include the value of a right. Thus the seller, who retains the right, may subscribe for one new share at a saving, which may be expressed as:  $162 - 127\frac{1}{2}$ . Since it was necessary to have 10 rights to purchase one share at  $127\frac{1}{2}$ , this saving represented the value of 10 rights. Stated otherwise:

$$\begin{aligned} 10 \text{ rights} &= 162 - 127\frac{1}{2} \\ 1 \text{ right} &= \frac{162 - 127\frac{1}{2}}{10} \\ 1 \text{ right} &= \$3.45 \end{aligned}$$

The value of a right with the stock selling "ex-rights" is usually calculated more directly by the formula:

$$\text{Value of a right} = \frac{P}{R}$$

in which  $P$  and  $R$  are similar to the formula explained above. In this case

$$\text{Value of a right} = \frac{162 - 127\frac{1}{2}}{10} = \$3.45$$

### Review Questions

1. Interpret the following quotations on bonds: Delaware & Hudson 4's of 1963, 94 $\frac{1}{2}$ ; New York City 4 $\frac{1}{2}$ 's of 1979, bid 140; asked 141 $\frac{3}{4}$ ; United States Treasury 2 $\frac{1}{2}$ 's of 1949-53, bid 106.12, asked 106.14.

2. Distinguish between a bond quoted at a discount and a bond quoted at a premium.

3. What is meant by an "and interest" price of a bond?

4. Explain the computation of accrued bond interest.

5. How is accrued interest computed on a bond sold on a "delayed delivery" basis?

6. Under what conditions are bonds quoted "flat"?

7. Distinguish between price and yield on a bond as a criterion of investment value.

8. Distinguish between nominal and current yield on a bond.

9. Distinguish between "accumulation" and "amortization."

10. Explain the significance of bond yield to maturity.

11. Name two methods of calculating bond yield to maturity.

12. Discuss the theory underlying the construction of a bond table.

13. Indicate the two problems most frequently arising in connection with bond investment.

14. Explain what is meant by interpolation in the use of bond tables.

15. Explain the calculation of net yield on a bond callable for redemption prior to maturity.

16. Interpret the following quotations on stocks: United States Steel preferred, 126 $\frac{1}{2}$ ; Philco Corp. common, 34; Manufacturers Trust Co. common, bid 50 $\frac{1}{2}$ ; asked 53.

17. What is meant by the statement that stock prices are quoted "flat"?
18. Name the significant dates in the distribution of dividends on stock.
19. What is meant by the "ex-dividend" date on a stock?
20. Explain the calculation of yield on a stock.
21. Compare the significance of stock yield and bond yield.
22. Name the factors entering into the total cost to the buyer of a bond.
23. Name the factors entering into the total cost to the buyer of stock.
24. Name the factors entering into the computation of the net proceeds to the seller of a bond.
25. Name the factors entering into the computation of the net proceeds to the seller of stock.
26. Indicate the problems faced by the holder of a convertible bond.
27. Distinguish between the conversion price and the conversion ratio in a convertible bond.
28. Explain how the adjustment is made when the conversion price results in a fractional share.
29. Explain the significance of parity prices in convertible bonds.
30. Explain the adjustment of accrued interest on the bond and accrued dividend on the stock in the conversion of a bond into stock.
31. Explain the calculation of conversion parities on an "and interest" price for the bond and an "and dividend" price for the stock.
32. Explain the basic significance of rights.
33. Define a right.
34. Name the factors involved in the announcement of rights.
35. Distinguish between a right and a warrant.
36. Describe the market in rights.
37. Name the factors affecting the value of a right.
38. Distinguish between a stock selling "cum rights" and a stock selling "ex-rights."

### Assignment

- (a) Compute the accrued interest on a 4 per cent bond purchased on Monday, November 20, with interest dates February 1 and August 1.
- (b) Calculate the accrued interest on a 3 per cent bond, interest payable January 1 and July 1, bought on Tuesday, May 20, at 80, on an "S7F" basis.
- (c) Compute the current yield, the approximate yield to maturity, and the exact yield to maturity on a 4 per cent bond maturing in 10 years and selling at 104.
- (d) Compute the yield to maturity on a 3 per cent bond selling at 151 and maturing in eleven years.
- (e) Compute the conversion ratio of a bond with a conversion price of 50.
- (f) Compute the conversion parity of a bond with a conversion price of 110 when the stock into which it is convertible is selling at 50.
- (g) Compute the cost to the buyer and the net proceeds to the seller of 5 \$1,000 (principal value) corporate bonds, 4 per cent coupon rate, due in 1995, interest dates May 1 and November 1, bought on Thursday, February 10, at 110 $\frac{1}{8}$ .
- (h) Indicate the ex-dividend dates on the following stocks traded on the New York Stock Exchange:

<i>Stock</i>	<i>Record Date</i>
A . . . . .	Wednesday, May 10
B . . . . .	Monday, June 9
C . . . . .	Thursday, December 26

- (i) Compute the yield on a common stock with a dividend payment at the annual rate of \$2 and selling at 50.
- (j) Compute the conversion parity of the stock referred to in (f) when the bond is selling at 90.
- (k) Compute the commission on 57 shares of stock purchased at  $42\frac{5}{8}$ .
- (l) Compute the cost to the buyer and the net proceeds to the seller of 100 shares of common stock (par \$100) bought at 72.
- (m) Compute the value of a right on February 15 and on March 27 from the following data: announcement date, February 1; record date for right, February 19; expiration date for right, March 31; five old shares needed for one new share; subscription price, \$70; market price of old stock, \$92 on February 15 and \$98 on March 27.

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## CHAPTER SEVEN

### NEW SECURITY ISSUES

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**Federal Securities Act, 1933.** The Securities Act of 1933 brought the regulation of securities issued in interstate commerce under the control of the federal government. The primary purpose of the Act was "to provide full and fair disclosure of the character of securities sold in interstate and foreign commerce and through the mails and to prevent frauds in the sale thereof. . . ." The law requires the registration of a new security issue with the Securities and Exchange Commission prior to the public offering of the issue. A "public offering" refers to securities publicly offered by an issuer or sold by an issuer through underwriters or dealers. Certain classes of domestic securities are exempt from the registration requirement: (a) United States Government obligations, (b) territorial bonds, (c) federal instrumentalities such as Federal Land Bank bonds, (d) state and municipal bonds, (e) railroad securities, (f) receiver's certificates, (g) certain issues not exceeding \$300,000 at the option of the Commission and (h) securities of Savings and Loan Associations. Brokerage orders for new securities are also exempt when executed upon unsolicited customers' orders.

**Registration.** A registration statement and copies of all prospectuses to be used must be filed with the Commission before any non-exempt security may be publicly offered for sale. The registration statement requires specific information on approximately thirty-two designated points, among which are the following: (a) the purpose of the issue, (b) the price at which the issue is to be offered to the public, (c) the price at which the issue is to be offered to any special group, (d) disclosure of any purchase option agreements, (e) promotion fees, (f) underwriting profit, (g) net proceeds to the company, (h) remuneration of any officers receiving over \$20,000 annually, (i) detailed capitalization statement, (k) detailed balance sheet, (l) detailed earnings statement for three preceding years,

(m) names and addresses of officers, directors, and underwriters, (n) names and addresses of stockholders owning more than 10 per cent of any class of stock, (o) a copy of the underwriting agreement, (p) a copy of legal opinions, (q) a copy of articles of incorporation or association, and (r) copies of indentures affecting new issues.<sup>1</sup>

*Examination.* The registration statement is subject to examination by the Commission. It is not the function of the Commission, however, to pass upon the economic desirability nor upon the investment quality of the issue. The Commission's chief function is to see to it that the requirements of the Act are fulfilled. It is empowered, however, to prescribe the forms in which the financial information is to be submitted, that is, the items to be shown and the methods to be followed in the preparation of accounts in the appraisal of assets and liabilities, in the determination of depreciation and depletion, and in the differentiation between charges to capital account and to operating expenses.

The examination of the registration statement by the Commission may result in either (a) a deficiency statement, (b) a stop order, or (c) no action at all. Where examination of the registration statement discloses deficiencies but at the same time reveals an honest attempt to meet the specified requirements, the Commission sends the registrant a so-called deficiency letter. The letter is usually sent within approximately ten days after the original filing date, which affords the registrant an opportunity to correct the statement by amendment before the indicated effective date and before the securities are offered for sale.<sup>2</sup> If, on the other hand, examination of the registration statement shows that it includes untrue statements or omissions of material facts that reflect intentional or reckless disregard of the standard of fair disclosure prescribed by the Act, stop-order proceedings usually are instituted immediately. For example, the Commission, having a reasonable cause to believe that the registration statement filed by one company included

<sup>1</sup> The public offering price and the names of the principal underwriters are usually provided later by amendments to the registration statement.

<sup>2</sup> Section 8 (b): "If it appears to the Commission that a registration statement is on its face incomplete or inaccurate in any material respect, the Commission may, after notice by personal service or the sending of confirmed telegraphic notice not later than ten days after the filing of the registration statement, and opportunity for hearing (at a time fixed by the Commission) within ten days after such notice by personal service or the sending of such telegraphic notice, issue an order prior to the effective date of registration refusing to permit such statement to become effective until it has been amended in accordance with such order the Commission shall so declare and the registration shall become effective at the time provided in subsection (a) or upon the date of such declaration, whichever date is the later"



"untrue statements of material facts" and failed "to state material facts," instituted stop-order proceedings pursuant to the Act and scheduled a hearing.<sup>3</sup>

The information contained in the registration statement must be kept reasonably current pending the complete distribution of the registered issue. The balance sheet must be "as of a date not more than ninety days prior to the date of the filing of registration statement." The profit and loss statement must be for the latest fiscal year and for the two preceding fiscal years. If the date of filing of the registration statement is more than six months after the close of the last fiscal year, the issuer must append a supplementary statement from such closing date to the latest practicable date. The information contained in or filed with the registration statement must be available to the public "under such regulations as the Commission may prescribe, and copies thereof, photostatic or otherwise," must be provided to any applicant "at such reasonable charge as the Commission may prescribe."

The acceptance of a registration statement by the Commission does not imply an endorsement or approval of the security or the issuer by the Commission. The Commission takes positive action only in the form of a deficiency notice or a stop order, thus suspending the registration. Inaction simply means that the Commission has found no reason for suspending the registration, in which case the registration becomes effective on the effective date. Commission regulations (Rule 825) require the following statements to be made in prominent type on the front cover of every prospectus:

These securities have not been approved or disapproved by the Securities and Exchange Commission.

ABC Corporation has registered the securities by filing certain information with the Commission. The Commission has not passed on the merits of any securities registered with it.

It is a criminal offense to represent that the Commission has approved these securities or has made any finding that the statements in this Prospectus or in the Registration Statement are correct.

*Prospectus.* A prospectus must be delivered to all purchasers of registered securities. The term "prospectus" is applied to any notice, circular, advertisement, or letter, written or broadcast, that offers a security for sale. Since the offering is based upon the registration statement, the information contained in the prospectus

<sup>3</sup> The Commission may suspend registration even after a registration statement becomes effective where it develops that the information provided therein is untrue or misleading in any material respect.

must coincide with that in the registration statement, with the omission of certain technical features, as stated in the law and as determined by the Commission. The prospectus contains the following statement:

A Registration Statement (Form S-1) with respect to the securities referred to on the cover of the Prospectus has been filed with the Securities and Exchange Commission, Philadelphia, Pennsylvania, under the Federal Securities Act of 1933, as amended, and copies thereof may be procured from the Commission by payment of the fee prescribed by the Rules and Regulations of the Commission. This Prospectus does not contain all the information set forth in the Registration Statement, certain items of which are omitted or included in condensed or summarized form in accordance with the Rules and Regulations of the Commission. For further information with respect to said securities and ABC Company, reference is made to the Registration Statement and the Financial Statement, notes and schedules, and Exhibits filed therewith.

The purpose of registration is twofold: (a) it enables the Commission to prevent the public sale of the issue, if such action is found desirable for any reason in the public interest; and (b) a record of the representations made by the issuer is thus preserved so that false or misleading statements or omissions of material facts can be readily proved and the buyer protected.

**Civil liabilities.** If the registration statement or prospectus contains any untrue statement of a material fact or omits any material fact, any purchaser who is unaware of the situation at the time of purchase may take legal action for recovery of loss. The persons liable are (a) those who signed the registration statement, (b) all directors of the issuing corporation, (c) accountants, engineers, or other professional experts who helped to prepare or who certified any part of the registration statement, and (d) the underwriters.<sup>4</sup>

The purchaser may bring suit to recover from any or all persons liable and may recover the difference between the amount paid for the security, not exceeding the public offering price, and either (a) the value of the security at the time the suit was brought or (b) the price at which the security had been subsequently disposed of in the market. Such a suit must be brought within one year after (a) the discovery of the untrue statement or omission or (b) such discovery should have been made by the exercise of reasonable

<sup>4</sup> Originally insurance companies, investment trusts, and other large purchasers refrained from taking some or all of the undistributed portion of a security issue for investment at reduced prices for fear of being classified as underwriters under the Act and thereby subject to civil liabilities. In 1938, however, the Commission adopted a rule that made possible the elimination of civil liabilities of subunderwriters under the Act.

diligence on the part of the buyer. In no event, however, can such action be brought later than three years after the effective date of the registration statement.

Individuals other than the issuer may escape this liability if the misstatement or omission occurs in (a) an extract from a public official document, (b) an expert report, or (c) some other source in the accuracy of which there were reasonable grounds to believe. The standard of what constitutes a "reasonable ground for belief" is "that required of a prudent man in the management of his own property." In such a recovery suit a defendant can reduce his liability if he can prove that part or all of the damages for which recovery is sought were not caused by the misstatement or omission. In any event, each underwriter's liability is limited to a maximum amount of damages not in excess of the total price at which the securities underwritten by him are offered for sale to the public.<sup>5</sup> To discourage the filing of unjustified suits, it is provided that the trial court can assess all court costs against the litigant losing the case.

**Function of investment banking.** Issuers of new securities face the problem of placing the securities with investors. It is the chief function of an investment banking house to assist the issuer in the distribution of new issues. The investment banker is a middleman who sets up the machinery whereby demand for capital (issuers) and supply of capital (investors) are brought together. Like the merchant, the investment banker places his own capital in long-term new securities not for investment but for resale at a profit. The capital invested in the securities purchased must be released through the resale of the securities before additional securities may be purchased.

**Classification of investment banking houses.** Investment banking houses may be classified according to (a) field of activity, (b) nature of business, and (c) form of organization. Some houses, such as Halsey, Stuart & Company, and The First Boston Corporation, do a nationwide business with offices in many of the principal cities, whereas some of the very largest, such as Morgan Stanley & Company and Kuhn, Loeb & Company, have no out-of-town offices.

Investment banking firms may be divided into three groups according to the nature of the business. A small number of firms, probably not more than six in the entire country, specialize in

<sup>5</sup> Any provision in a contract waiving those protections in the law are specifically stated to be void.

originating and wholesaling security issues. They originate issues, form syndicates, underwrite, and sell largely at wholesale to dealers. Typical of this type of firm are Morgan Stanley & Company and Kuhn, Loeb & Company. A much larger number of houses originate security issues, underwrite, wholesale, and retail. They form syndicates for their own originations and also participate in syndicates formed by other houses. They have well-organized retail sales departments that sell directly to investors. Typical of this group are The First Boston Corporation, Brown, Harriman & Company, Lee, Higginson Corporation, and Halsey, Stuart & Company. In a recent year, Halsey, Stuart & Company led in the total of bond issues in which it acted as syndicate head or joint manager, with a figure of \$272,768,614.<sup>6</sup> Lehman Brothers was second with \$176,083,000, and The First Boston Corporation third with \$133,074,000. On the other hand, The First Boston Corporation was first in participations, with a total underwriting of \$27,048,000 of bonds, followed by Blyth & Company with \$22,579,000 and Halsey, Stuart & Company with \$20,204,000.<sup>7</sup> A still larger group consists of firms that serve local areas and whose function is primarily retail selling. Their financial strength is not adequate to permit them to originate new issues or even to participate in the flotations of larger houses, but confines them almost entirely to purchasing small blocks of new securities from the larger houses on a wholesale basis and then distributing those securities to their customers at a small profit margin.

Investment banking firms are either partnerships or corporations. Morgan Stanley & Company was an incorporated company engaged almost exclusively as a wholesale underwriting house until 1941, when it became a partnership and expanded the scope of its activities. Firms organized as partnerships include Lehman Brothers, Kuhn, Loeb & Company, and Smith, Barney & Company; those organized as corporations include A. G. Becker & Company, The First Boston Corporation, and Lee, Higginson Corporation.

**Functions of investment banking houses.** The internal organization of an investment banking firm depends chiefly upon the size of the house. The larger houses, handling a wide variety of issues, are more departmentalized than the smaller firms, which of necessity must combine many activities into a few operating departments. The functions of a house may be divided into four: (a) the

<sup>6</sup> This compilation included railroad and municipal bonds.

<sup>7</sup> This compilation did not include municipal or railroad bonds, in which the participations of underwriters were not a matter of public record.

buying function — purchasing, through underwriting or otherwise, securities to be offered for resale; the (b) selling function — distributing the securities either at wholesale through other dealers or at retail directly to the public; (c) the advisory function — giving professional advice to issuers and buyers of securities; and (d) the protective function — protecting the interests of holders of securities through the maintenance of secondary markets and by the formation of protective committees in reorganizations.

**Placement of new issues.** Issuers place new securities in the hands of investors, either through direct sale or through investment banking houses. Direct selling is employed by the federal government in the issue of new obligations to the general public and by corporations in a form called “private placement,” in which the securities are sold directly to large investing institutions such as life insurance companies.<sup>8</sup> For instance, National Cash Register Company once sold a \$6,000,000 issue of debenture  $2\frac{1}{2}$ 's, due in 1953, privately to the Prudential Insurance Company of America at par and accrued interest, and Peoples Gas, Light & Coke Company sold at par a \$20,000,000 issue of first and refunding mortgage 3's, series G, due 1961, to eight life insurance companies: \$5,000,000 to Metropolitan Life, \$4,000,000 each to Prudential and Equitable Life, \$3,000,000 to Mutual Life, and \$1,000,000 each to John Hancock Mutual Life, Northwestern Life, Massachusetts Mutual Life, and Penn Mutual Life.

Private placement of securities by a corporation has the advantage to the issuer of a saving in the time, labor, and expense involved in the registration of a new issue for public sale and in the elimination of the investment banker's underwriting profit. Such issues are exempt from registration on the theory that large institutional investors are equipped to appraise a security and therefore do not need the protection allegedly afforded to the small investors through registration. On the other hand, such placements are not eligible for resale to the public at a later date unless the proper registration procedure is completed. Private placement, however, denies the investing public the opportunity of participating in the better quality of new issues that are thus preempted by a relatively few large institutions. This is especially true of bonds called for

<sup>8</sup> An investment banking house usually acts as agent for the corporation in the private placement of a bond issue. The \$13,855,000 Washington Gas Light Company 3½'s of 1970 were placed privately with certain institutions who purchased them for investment. A total of \$12,930,000 was placed by The First Boston Corporation, while the remaining \$925,000 was sold directly by the company.

redemption under a refunding operation and redeemed out of the proceeds of a new issue privately placed. The bondholder is not only required to relinquish the redeemed bond but also is denied the opportunity of purchasing the new bond.

On the other hand, a public offering of a corporate issue is placed through investment banking firms and is bought by those firms either through competitive bidding or by private negotiation.

**Competitive bidding.** Municipal, railroad, and certain public utility company securities are sold on a competitive basis.<sup>9</sup>

*Municipal.* Under most state laws, municipal issues must be sold at competitive bidding in accordance with a prescribed procedure.<sup>10</sup> The proposed offering of a municipal issue involves consideration of the bond and money markets. Since the issue must appeal to dealers in municipal bonds from whom bids are to be received, and to investors to whom the bonds will be offered, the terms of the offering must be in accordance with market conditions. Upon completion of the terms of the offering, the municipality advertises the issue and announces the day, hour, and place at which it will receive sealed proposals for the purchase of the bonds. Usually the announcement either stipulates the maximum coupon rate on which bids will be received or allows the bidders to name the rates. For small issues, investment banking houses frequently submit individual bids; for medium or large issues, a number of houses usually form a syndicate and enter a bid based on a joint account. The number of houses forming the group depends upon the size of the issue. The bidding for a new issue of municipal bonds is keenly competitive and basically is a mathematical calculation. The actual bids placed are seldom in simple fractions; they are usually in involved decimals such as 101.5134. Sometimes the bid is made on an "all or none" basis, which means that the bid is good only for the entire issue. The bonds are awarded according to the best price to the municipality, either on the basis of aggregate combination of partial bids or on the basis of "all or none" bids.

*Railroad.* In 1926 the Interstate Commerce Commission required competitive sale of railroad equipment trust certificates. Later it extended the principle to certain high-grade railroad terminal bonds guaranteed by a number of railroads. In 1944, however,

<sup>9</sup> See Appendix E for invitations for bids on the sale of securities.

<sup>10</sup> The municipal bond field includes the obligations of states and political subdivisions of states.

it formally adopted the principle of competitive bidding, with certain exceptions, for all public sales of railroad securities over \$1,000,000. The exceptions included (a) common and preferred stocks, (b) any note or other security maturing in not more than three years, (c) securities issued in exchange for the securities or properties of other railroads, (d) securities sold or otherwise issued to a railroad by any of its subsidiaries when not sold by the parent, (e) securities sold or otherwise issued pro rata to existing holders of securities of the issuing company or in exchange for outstanding obligations in a reorganization or liquidation, and (f) securities specifically exempt by the Interstate Commerce Commission upon application and proper showing that competition should not be required.

The bidding for new railroad issues is sometimes very complicated. For example, the Central Railroad of Pennsylvania, a subsidiary of the Central Railroad of New Jersey, once offered an issue of certificates to finance the purchase of rolling stock. The investment houses had a choice of bidding on \$3,970,000 of certificates, representing 80 per cent of the cost of the cars, or on \$3,720,000 of certificates, representing 75 per cent of the cost. On either or both of those amounts they could stipulate maturities of one to ten years, or one to fifteen years. The winning bid, submitted by a group headed by Halsey, Stuart & Company, named a price of 99.893 for an 80 per cent loan running up to ten years as 2 per cent certificates; 100.149 for a 75 per cent loan of one to ten years as 2 per cent certificates; and 99.76 for a 75 per cent loan running for one to fifteen years as  $2\frac{1}{4}$  per cent certificates. Other syndicates that bid on the issue were Salomon Bros. & Hutzler, and associates, who bid  $99\frac{1}{8}$  for an 80 per cent loan running from one to ten years as 2 per cent certificates, and Harris, Hall & Company, and associates, who bid 99.55 for a 75 per cent loan running from one to ten years as  $2\frac{1}{4}$  per cent certificates.

*Public utility.* Public utility holding companies were placed under the jurisdiction of the Securities and Exchange Commission by the Public Utility Holding Company Act of 1935. The Commission adopted a rule (U-50) in 1941 which required competitive bidding in the sale of securities by registered public utility holding companies and their electric and gas utility subsidiaries, except in cases where the Commission might grant an exemption. The rule, applicable both to security issues and to the sale by holding companies of portfolio utility securities, prescribes public invitation.

of sealed bids.<sup>11</sup> The following transactions are specifically exempt: (a) securities sold for less than \$1,000,000; (b) securities issued pro rata to existing security holders pursuant to any preemptive right or privilege or in connection with any liquidation or reorganization; and (c) loans of a maturity of ten years or less, where either the lender is a moneyed institution not purchasing for resale or no finder's fee or other negotiation charge is to be paid to any third party.

Bidding on a public utility issue is usually limited to a few groups.<sup>12</sup> For example, five groups once competed for a \$18,000,000 issue of Oklahoma Natural Gas Company first mortgage bonds. The successful syndicate, headed by Morgan Stanley & Company and Smith, Barney & Company, named a price of 101.0939 and a coupon rate of  $2\frac{7}{8}$  per cent. On the other hand, only two groups bid for an issue of Florida Power and Light Company bonds. The successful syndicate, headed by The First Boston Corporation, bid a price of 104.019 and a rate of  $3\frac{1}{2}$  per cent.

The spread between bids for issues has sometimes been very close. Halsey, Stuart & Company recently won over a group led jointly by Harriman, Ripley & Company and Mellon Securities Corporation by less than  $2\frac{1}{2}$  cents per \$1,000 bond for an offering of \$30,000,000 Brooklyn Union Gas first  $3\frac{1}{2}$ 's. The aggregate money difference between the bids was \$720. In another instance, only 3 cents per \$1,000 bond separated Mellon Securities Corporation's winning bid of 100.312 for a Metropolitan Edison bond offering from that of 100.309 submitted by Halsey, Stuart & Company. Both bids were for a  $2\frac{7}{8}$  per cent coupon and the difference between them was \$735 for the entire \$24,500,000 offering.

Many public utility companies have applied to the Commission for exemption from competitive bidding under Rule U-50. The Commission has been reluctant, however, to grant exemptions on the grounds (a) that the competitive bidding rule was designed to afford, among other things, an orderly and fair method of determining whether the cost of money to the issuer is reasonable, and (b) that there is at least an equal chance that the issuer will obtain

<sup>11</sup> Pacific Gas and Electric Company, for example, advertised for bids on March 21, 1945, to be received March 26, 1945, on its proposed offering of \$80,000,000 in new first and refunding mortgage 3's, series M, due December 1, 1979.

<sup>12</sup> An investment house that has been retained for a fee to give financial advice to a company on the sale of securities is not permitted by the Commission to participate in bidding for the same securities, since "such financial advisers may have an unfair advantage over other bidders because of earlier and closer association with the transaction."



a better price by competitive bidding. The Commission usually denies applications for exemption unless, in the opinion of the Commission, special circumstances justify the conclusion that competitive bidding is inappropriate within the provisions of the rule.

**Private negotiation.** Some corporate securities, especially of industrial companies, are purchased through private negotiation between the investment banking house and the corporation. In all purchases, whether by competitive bidding or by private negotiation, the investment banking firm has three objectives in buying the securities: (a) to resell the securities at a profit, (b) to distribute the securities to the investing public as rapidly as possible in order to minimize the carrying risk assumed by the house, and (c) to have the securities "well placed" — that is, placed in the hands of investors who will hold them for a considerable period of time and not dump them on the market because of nervousness or a desire to realize a small speculative profit.

**Buying department.** In view of the fact that an issue "well bought is well sold," the initial step is taken by the buying department, whose general function it is to investigate and pass judgment upon all propositions either to originate new security issues or to participate in security issues originated by other houses. The buying department usually takes two preliminary steps: (a) office analysis and (b) plant examination. The office analysis is conducted at the office of the investment banking house and involves an analysis of the financial statements and general history of the issuer for the purpose of determining whether the issuer has shown a satisfactory earnings record over a period of several years. Many proposals fail to meet this requirement and, therefore, do not get beyond this stage. The plant examination is conducted at the place of the issuer, where a searching inquiry into the internal affairs of the company is made by appraisers, auditors, industrial engineers, and marketing specialists in the employ of the investment banking firm. Legal counsel also passes upon such matters as franchises, leases, and contracts to which the issuer may be party.

The findings and recommendations of the buying department, based on the office study, are usually submitted to the "investment committee" consisting of the senior officers or partners of the firm. If the decision of the committee is favorable, the firm takes an option on the issue pending a more careful and detailed investigation of the proposition. A final favorable decision is followed by a negotiation conference with the issuer. At the negotiation con-

ference a final agreement is reached, which is formally expressed in an underwriting contract between the issuer and the buying group.

**Purchase agreement.** The distribution of a security issue involves a distribution of the risk and a distribution of the securities. A large issue involves risks which a single investment house is unwilling to assume and, for this reason, the originator of the issue forms a buying group to distribute the risk among a number of houses. It also forms a selling group to obtain a speedier distribution and a better placement of the securities. For this reason, while the negotiations between the originating house and the issuer are in progress, the former is inviting other houses to join it as joint underwriters in the purchase of the issue. The originating house, which usually acts as group manager, selects the firms to be invited to participate as joint underwriters and determines the size of the individual participations. The number of participants varies with the size and quality of the security issue and the current position of the investment market. For example, 146 houses constituted the buying group in the \$100,000,000 American Tobacco debenture 3's of 1962, and 148 member firms composed the buying group for the company's \$100,000,000 issue of 3 per cent debentures due in 1969. On the other hand, 56 houses formed the buying group for the \$20,000,000 P. Lorillard debenture 3's of 1963.

*Selection of participants.* Two factors enter into the selection of the participants in a buying group: (a) financial responsibility, since each participant is expected to purchase its commitment outright and to pay in cash before any retail distribution is made; and (b) ability to distribute securities at retail or wholesale, in order to effect a speedy distribution. The size of individual participations may vary rather widely. For instance, the individual participations in the American Tobacco 3's of 1962 ranged from \$100,000 to \$5,000,000, and in the P. Lorillard 3's of 1963 from \$100,000 to \$1,800,000. In determining the participation offered each participant, the group manager is guided largely by the record of the various houses in past flotations.

*Nature of purchase agreement.* The agreement under which the joint underwriters purchase the security from the issuer is known as the purchase agreement. The chief items in the purchase agreement are: (a) a full description of the securities to be issued; (b) the method and time of payment and delivery of the securities; (c) provision for a carefully drawn registration statement and prospectus

under the Securities Act of 1933; (d) agreement by the underwriters to make public offering usually as soon as possible after the registration statement becomes effective; (e) disposition of proceeds of issue, future financing, and reports to the underwriters; (f) agreement to indemnify the underwriters against the Federal Securities Act and common law liabilities incurred in connection with the issue; and (g) a provision that the whole transaction is contingent upon finding representations as stated by the company to be correct.

The issuer usually agrees to pay all costs and expenses in connection with the delivery of the securities and sometimes includes counsel and other expenses incurred by the underwriters, compliance with state blue-sky laws, and listing on exchanges. For example, the expenses incurred by Alleghany Corporation in the issuance of its  $3\frac{1}{4}$  per cent secured convertible notes of 1954 amounted to \$239,750 and consisted of:

Securities and Exchange Commission registration fee . . .	\$ 3,150
Federal Issue tax . . . . .	33,000
Fee for listing notes on New York Stock Exchange . . . .	3,600
Expense of printing registration statement, prospectus, exhibits, indenture, and other documents . . . . .	30,000
Preparation of the notes . . . . .	14,000
Trustee's charges and expenses in connection with the execution of the indenture and the authentication of the notes . .	20,500
Payment to underwriters in partial reimbursement of their out- of-pocket expenses . . . . .	35,000
Fees and disbursements of counsel for Alleghany . . . . .	65,000
Auditor's fees and expenses . . . . .	10,500
Miscellaneous . . . . .	25,000
Total . . . . .	<u>\$239,750</u>

It is usual, also, for the issuer to give specific permission to the purchase group and dealers to use the prospectus, and to provide an adequate number of copies.

To guard against unforeseen changes in the capital market during the twenty-day "waiting period," the price to the issuer and to the public is usually not stated in the purchase agreement or original registration statement. It is inserted later by filing an amendment to the registration statement. For example, the public offering price of 102.15 on the \$30,000,000 Alleghany Corporation  $3\frac{1}{4}$ 's of 1954 was not made public until an amendment to the registration statement stating the price was filed with the Commission two days

before the offering date.<sup>13</sup> The price at which the issue is to be offered to the public is most important for a successful offering. If an issue is overpriced, it may encounter market resistance during the period of the public offering and subsequently experience a decline in market price that will react unfavorably upon the investors who bought the security at the public offering price and upon the issuer, whose credit rating is thereby affected. The underwriters, too, may incur a substantial loss. If an issue is underpriced, the subsequent rise in market price reacts unfavorably upon the issuer, who feels the issue was sold too cheaply. The final public offering price is influenced by the features of the issue and the market position of similar outstanding securities with special reference to yield, maturity date, and coupon rate. For example, the \$175,-000,000 American Telephone & Telegraph Company's debenture 2 $\frac{3}{4}$ 's of 1980, one of the largest offerings in the history of American finance and the largest ever to come up for sale at competitive bidding, was publicly offered at 100. Although it was anticipated that the debentures would sell above par as a distributed issue (as they did), nevertheless the size of the issue and the slowness with which institutional investors were absorbing other new issues led the underwriters to set a price no higher than par.

Since the underwriters buy the issue to sell it at a profit, the purchase price paid by the underwriters to the issuer is the public offering price less the gross underwriting spread, which in turn is influenced by the quality and size of the issue and the condition of the market. The underwriting spread represents the underwriters' compensation for (a) risks they assume in agreeing to buy the issue, (b) services rendered in distribution, (c) expert advisory and technical services rendered to the issuer in preparing the issue, and (d) actual expenses incurred in both the preparation and distribution. For example, the \$20,000,000 P. Lorillard Company debenture 3's of 1963 were sold to the underwriters at par and offered to the public at 101 $\frac{3}{4}$ , yielding to the underwriters a commission of 1 $\frac{3}{4}$  per cent. The spreads on a selected group of new offerings were:

<sup>13</sup> The price to the public was 102.15 per cent plus accrued interest from April 15 to the date of delivery; the underwriting discounts and commissions were 1.90 per cent; and the net cash proceeds to Alleghany Corporation were 100.25 per cent. In terms of dollars, the amounts were \$30,645,000, \$570,000, and \$30,075,000, respectively. The net cash proceeds to Alleghany Corporation were further reduced by \$239,750, representing expenses incurred in connection with the issuance of the notes.

<i>Issuer</i>	<i>Proceeds to Issuer</i>	<i>Price to Public</i>	<i>Spread</i>
California Oregon Power first mortgage 3 $\frac{1}{8}$ 's, 1974 . . . . .	101 70	102 86	1.16
Chicago, Burlington & Quincy refunding mortgage 3 $\frac{3}{4}$ 's, 1974 .	99 137	100 75	1.613
Metropolitan Edison first mortgage 2 $\frac{7}{8}$ 's, 1974 . . . . .	100 312	101 625	1 313
Potomac Edison first mortgage & collateral trust 3's, 1974 . . .	101 402	102.50	1 098
American Telephone & Telegraph debenture 2 $\frac{3}{4}$ 's, 1980 . . . . .	99 5599	100 00	.4401

*Escape clauses.* The purchase agreement also usually contains numerous "escape" clauses, the most common of which provides that the originator, as representative of the purchase group:

... may, in its discretion, terminate this agreement, without liability on the part of the members thereof if prior to the time for delivery any substantial change in the position of your company, or any subsidiary, or in the existing operation, political, economic or market conditions shall have taken place which, in our opinion, renders it impracticable or inadvisable to market the bonds at the price to the public named.

It should be noted, however, that the purchase agreement is drawn up and signed after the registration statement for the issue has been filed with the Commission, but before the registration has become effective. The purchase agreement under which the \$30,000,000 issue of Alleghany Corporation 3 $\frac{1}{4}$  per cent secured convertible notes of 1954 were publicly offered was signed two days before the public offering.

**Effective date.** The registration statement becomes effective on the twentieth day after its filing with the Commission.<sup>14</sup> The date selected for the public offering of the issue is important to the success of the issue. It is selected with a view to avoiding foreseeable unfavorable conditions. The group manager may postpone the public offering beyond the effective date, but he cannot offer the issue prior to that date. Since the earliest effective date is measured from the date of filing, the latter, too, must be selected with care. The Commission has discretionary authority, however, to accelerate the effective date of the registration statement. When the statement becomes effective, the issue may be publicly offered

<sup>14</sup> On the seventh day, in the instance of foreign government issues Section 8 (a) provides that "in cases of Securities of any foreign public authority, which has continued the full service of its obligations in the United States, the proceeds of which are to be devoted to the refunding of obligations payable in the United States, the registration statement shall become effective seven days after the filing thereof."

for sale. The Commission has ruled that the "twentieth day" begins immediately upon the close of business at the Commission at 5 : 30 P.M., Eastern Standard Time, after nineteen days from the date of filing have elapsed, counting weekdays, Saturdays, Sundays, and other holidays alike. The registration statement may be amended during this waiting period without changing the effective date.<sup>15</sup> The Commission usually permits the issuer to withhold from the registration statement the public price of the offering and the names of the underwriters until shortly before the date on which the statement becomes effective.<sup>16</sup> The purpose of the twenty-day waiting period is to give the Commission time in which to make an examination of the registration statement for omissions, incomplete disclosures, and inaccuracies and to give the investor time in which to consider the facts concerning the proposed security issue.

**Purchase group agreement.** The purchase group agreement, signed by all participating firms, holds each participant responsible only for its designated share. Thus a firm that has a \$4,000,000 participation in a purchase group for an issue of \$40,000,000 of bonds is responsible only for its share. The agreement also states the portion of this participation which the participant agrees to "give up" for allocation to members of the selling group, the balance being retained by the participant for its own retail distribution. The manager is usually authorized to make sales in large blocks to institutional buyers, such as insurance companies, at the public offering price. In the offering of \$100,000,000 of debenture 3's of 1962 by American Tobacco Company, insurance companies were reported to have purchased between \$30,000,000 and \$40,000,000. Libby, McNeil & Libby brought out a \$7,500,000 issue of serial debentures, due 1945-1959, the first fourteen maturities of which were promptly sold to institutional investors by the group manager for group account. This is done to facilitate large institutional purchases, which can be made more effectively through the group manager than through a large number of individual houses. Such sales are pro-rated (according to participation) to the amounts

<sup>15</sup> Although the filing of an amendment to the registration statement prior to the effective date has the effect of establishing a new filing date and starting a new 20-day period running, the Commission is given power under the Act to relate the filing of such amendment back to the original filing date when such action is not detrimental to the public interest.

<sup>16</sup> An amendment filed after the effective date of the registration statement becomes effective on such date as the Commission may determine, with due regard to the public interest and the protection of the investor.

retained by the participants for their own retail distribution.<sup>17</sup> The price and the time at which each participant is to make payment to the issuer are specified in the agreement.<sup>18</sup> The agreement states the public offering price of the securities and the date on which the offering is to take place. Each participant agrees not to sell any of the securities prior to the date nor to sell any of the securities to the public at less than the stipulated offer price during the life of the selling agreement. As part of the public sale of the securities, however, each participant usually assumes an additional obligation in connection with the market support operating during the initial period of distribution. This additional obligation is commonly limited to 5 per cent of the face amount of the issue. Thus the participant that has agreed to buy \$4,000,000 of the bonds must also take \$200,000 of the bonds which the group manager may have repurchased in the market in connection with his stabilization operations.<sup>19</sup>

*Price maintenance.* The price maintenance clause has become the center of a controversy as a result of the action of the United States Department of Justice in contending that the price maintenance agreements were in violation of the Sherman Anti-Trust Act. The confusion that followed led some underwriters to make modifications in their group agreements in order to avoid any possible conflict with the Sherman Act. In general, they narrowed the traditional thirty-day period of contractual maintenance of prices. In typical instances, dealer groups were called upon to adhere to original offering levels for fifteen-day periods after announcements of new offerings. Some contracts provided for renewals of price arrangements under certain circumstances after the initial period; others deleted all reference to price maintenance or stabilization. For example, the contracts sent out by Halsey, Stuart & Company to members of its group planning to bid for a New Jersey Power & Light Company issue contained no provisions for either price maintenance or stabilization.

Though the agreement states the date of group termination,

<sup>17</sup> Inasmuch as, under this arrangement, the participants do not know, at the time of signing the group agreement, the amount of securities which they will actually have available for retail sale to their own customers, the group agreement requires the group manager to notify each participant as to this amount on or immediately before the public offering date.

<sup>18</sup> In the event payment by a participant is not received by the manager at the time specified, the manager is authorized to borrow the sum involved in order to pay the issuer.

<sup>19</sup> See page 150 for discussion of supporting the market.

the manager is usually authorized to extend or curtail the life of the group within the limitations stated in the agreement.

**Selling group.** During the waiting period the group manager forms a "selling group" to handle the public distribution of the issue.<sup>20</sup> Under the Securities Act of 1933, the group manager may not actually offer the securities for sale to the selling group members until the registration statement becomes effective. He may, however, take preliminary steps toward the formation of the selling group. The selling group is concerned with the sale only of that portion of the new offering which is not actually sold by the purchase group members. It consists of dealers throughout the country and is formed in order to expedite the sale and to obtain a wide distribution of the issue.<sup>21</sup> Speed in selling the securities enables the underwriters to terminate their liability and to free their capital for other underwritings. A wide and permanent distribution of the securities enables the underwriters to satisfy the issuer and thereby assure permanent relations and at the same time to prevent dissatisfaction among their own clients arising out of later sharp declines in the market price of the security due to poor distribution. Members of the selling group are selected chiefly for their ability to place bonds with more or less permanent investors.

*Preliminary prospectus.* The group manager usually provides the dealers invited to join the selling group with a preliminary prospectus, commonly referred to as "red herring." Along the left-hand border of each page of the prospectus is printed in red the following statement:

A registration statement relating to the securities referred to herein has been filed with the Securities and Exchange Commission under the Securities Act of 1933, as amended, but has not yet become effective. The information contained herein is given circulation solely for informative purposes and is subject to correction and change without notice. Under no circumstances is it to be considered a prospectus or an offer to sell or as a solicitation of an offer to buy the securities referred to herein.

The preliminary prospectus differs from the one to be used in the public offering in that it does not reveal the price at which the issue.

<sup>20</sup> A selling group is not used in distributing municipal bonds. Usually the issue is offered for sale to the public and distributed by the buying group as soon as possible after it has been awarded. In some instances an issue, awarded in the morning, has been publicly offered in the afternoon of the same day. Such sales are made on a "when, as, and if issued" basis, pending the delivery of the securities to the buying group by the issuing municipality.

<sup>21</sup> The selling group offering the \$100,000,000 issue of American Tobacco 3's due 1962 consisted of approximately 600 houses, while the group distributing the company's \$100,000,000 issue of debenture 3's due 1969 included 400 members.



will be offered to the public or the concession that will be given to the members of the selling group. The preliminary prospectus is usually accompanied by a selling group letter that will serve as an agreement between the purchase group and the selling group. The public offering price and the selling group's concession are also omitted from the letter.

*Selling group dealers.* The dealers are usually allowed up to a certain hour on the public offering day to accept or decline the invitation, in accordance with the terms of the selling group letter. At the moment the registration statement becomes effective, the group manager sends a telegram to each dealer invited to join the selling group, advising the dealer of the public offering price and the concession. The dealer invited to join the selling group is usually offered a specific block of securities. Acceptance makes the securities "firm" to the amount accepted; that is, the dealer is assured of that allotment and can therefore confirm sales to its customers. The selling group member may subscribe for additional securities, but such subscription is subject to allotment by the group manager. The agreement also specifies the exact date on which the selling group member must pay for and take delivery of its allotted securities. The price concession to the selling group is carefully stated. For example, in the \$100,000,000 issue of American Tobacco 3 per cent debentures due in 1969, the selling group concession was  $\frac{3}{4}$  of 1 per cent.

Selling group commissions are retained by the group manager until the termination of the group. This is accomplished by requiring the dealer to pay for the securities at the public offering price. The arrangement has a twofold objective: (a) it provides for commission cancellation on securities repurchased through the group manager's trading account operated in support of the market, and (b) it gives the group manager greater control over the activities of the selling group.

The agreement states the offering price and prohibits the members of the selling group from selling the securities to the public at less than the public offering price during the life of the group. The agreement usually includes a provision permitting selling group members and participants to sell the securities to and to buy them from the group manager as well as between themselves. This provision permits the readjustment of oversubscribed positions by members who have purchased more securities than they can sell readily and who wish to dispose of their surplus to members who are undersupplied.

Every member of the selling group incurs the risk involved in its security purchase, but no liability to take up any securities unsold by the purchase group at the termination of the group. The member simply earns what amounts to sales commissions on the securities which it individually purchases and sells.

**Public offering of the issue.** On the date set for the completion of the terms of the underwriting contract, that is, the delivery date, each underwriter delivers to the managing house a certified bank check made out to the order of the issuer. The checks are delivered to the issuer at a designated bank in exchange for the bonds, which are usually in the form of temporary certificates exchangeable later for definitive bonds. For example, Halsey, Stuart & Company gave Commonwealth Edison Company a check for \$160,928,750 in payment for the utility's \$155,000,000 bond issue (including premiums and interest) sold to the investment bankers. The participant "takes down" only that part of its subscription which it plans to sell directly. The balance of its subscription or "give up" is distributed to the members of the selling group, from whom the participant will receive reimbursement through the group manager.

All firms participating in the distribution agree not to offer the new securities either before a specified time or under a minimum price. The group manager has full discretion in choosing the date of the offering and may delay the actual offering even though the twenty-day waiting period has elapsed. The time for the public offering is set exactly, for example, as "11 : 00 o'clock A.M., Eastern Standard Time, on the day after that on which the Registration Statement becomes effective." At the stated time the new securities are open for sale to the public directly through members of the purchasing or selling groups or indirectly through hundreds of small dealers and banks throughout the country. At the time set, the group manager "opens the books" by receiving subscriptions to the issue from both selling group members and outsiders. The manager may reject the subscriptions in whole or in part, except where firm subscriptions may be made by selling group members. The manager reserves the right to close the books at his discretion. If the demand is great and the books are closed shortly after the opening, the issue is announced as "oversubscribed." For example, on the day the \$23,000,000 issue of Virginia Electric and Power Company first mortgage 3's of 1974 was offered, the subscription books were closed before noon. The American Telephone & Tele-

graph Company's \$175,000,000 debenture 2 $\frac{3}{4}$ 's, due August 1, 1980, were fully subscribed for within an hour after the offering of the bonds. The term "oversubscribed" means oversubscription by dealers and not by investors. Oversubscription for the issue presents the group manager with the problem of allotment.

The small dealer who does not join the selling group may participate in the sale of the security by "selling off the list" of a larger firm. The small dealer secures the printed offering list of the larger firm and offers to sell securities from it at the prices therein stated. The larger firm, whose offering sheet is used, usually allows a special dealers' discount. The reallowance concession allowed to small dealers has been  $\frac{1}{8}$  to  $\frac{1}{4}$  of 1 per cent on bonds (\$1.25 to \$2.50 per \$1,000 bond).

**Subject and firm orders.** Orders from investors for new securities are either "subject" or "firm." A "subject" order is subject to confirmation. A "firm" order has been confirmed. All orders are subject to confirmation unless accepted on a "firm" basis. Subscriptions by investors may be accepted and confirmed without an initial payment by the investor on the subscription. Payment by the investor against the delivery of the temporary certificates is not required, usually, for a period averaging two weeks. The public offering price is an "and interest" price. For example, Virginia Electric and Power Company first and refunding mortgage, series D, 3's of 1974 were offered in May at 103 $\frac{1}{4}$  plus accrued interest from April 1 to date of delivery. On the date of payment, temporary certificates are delivered against cash payment by the subscribers. The temporary certificates, which are negotiable, are later exchanged for the definitive bond certificates. For example, the Mengel Company offered \$2,500,000 of debenture 3 $\frac{3}{4}$ 's of 1959 in April, and four months later the Guaranty Trust Company of New York, the trustee, announced that definitive debentures were available and would be given in exchange for temporary debentures at its corporate trust department.

**Supporting the market.** Sales of the new securities on the market at prices lower than the public offering price during the period of distribution would handicap the success of the distribution. It is usual, therefore, for the purchase group, through the group manager, to "support the market" during this period by placing buy orders in the market for the purchase of limited quantities of the bonds at or below the public offering price. In some instances similar buy orders are placed for the purchase of other securities of the issuer if those issues seem more attractively priced than the new

issue. In this way the market price of the new issue is not allowed to fall below the offering price during the period of distribution.

The group manager is generally authorized by the group agreement to sell the securities short and to over-allot the "give up" to selling group members. Each of those operations tends later to strengthen the market price of the securities when covering purchases are made. In the event that the trading account cannot readily purchase securities in the market to cover short or over-allotted positions, the group manager is authorized by the group agreement to call upon the participants to deliver the needed securities on a pro rata basis. Usually the agreement limits such liability to a maximum of 10 per cent of each participation.

The most common method of handling securities repurchased by the group manager through the trading account operated in support of the market is by redelivering the repurchased securities to the house originally selling them. Since the group manager maintains an accurate record of the serial numbers of all securities allotted to each house, the repurchased securities can be redelivered to the proper house and at the actual cost to the trading account, that is, the purchase price plus the buying brokerage commission. As a result the house is obliged to sell the same security twice but is credited with only one commission less brokerage costs. In this way the house is penalized for its original failure to place the security well. In other instances, the group manager cancels the commission of the house on the original sale and re-allots the security to another house which can place the security more satisfactorily.

Although the practice of "supporting the market" is a form of price manipulation, in the official opinion of the Commission, it has been approved as an essential part of security distribution. The Commission, however, has adopted two related rules for the purpose of (a) acquiring data on the stabilization, (b) aiding in the enforcement of the anti-manipulation sections of the Act, and (c) affording greater protection to the investing public. One rule requires a syndicate which contemplates stabilization to include in the prospectus a statement that it intends to stabilize security prices to facilitate the distribution in respect of which a registration statement is filed under the Act. Intention to "support the market" is usually announced in the prospectus by the statement:

To facilitate this offer, it is intended to stabilize the price of the Debentures to which this prospectus relates. This statement is not an assurance that prices of the Debentures will be stabilized, or that stabilization, if commenced, may not be discontinued at any time.

The second rule requires any underwriter of the issue, or any other broker or dealer who stabilizes in aid of distribution as to which a Securities Act registration statement is filed, to submit daily reports to the Commission showing all transactions effected during the period of stabilization and distribution of the issue. All daily reports are analyzed by the Commission, and price charts are constructed showing the market behavior of the stabilized security in relation to the movement of market averages of comparable securities.

In some cases, the termination of the group and the removal of market support is followed by a decline in the market price of the issue. A \$45,000,000 issue of Northern Indiana Public Service Company  $3\frac{1}{8}$  per cent bonds due in 1973 was brought out at 102 $\frac{7}{8}$  and when the group terminated the bonds receded to 101 $\frac{5}{8}$  bid, 101 $\frac{7}{8}$  asked. Louisiana Power and Light first mortgage 3's, due 1974, were offered at 103; upon termination of the selling agreement among the underwriters, the bonds were quoted at 101 $\frac{3}{4}$  bid, 101 $\frac{5}{8}$  asked.

**Termination of the group.** Under present-day practice, the life of the group seldom exceeds one month. Not all new security offerings, however, are quickly absorbed by the market. Unforeseen market conditions may make new issues of even high-grade securities difficult to sell or "sticky." In 1937 both a municipal issue and a corporate issue encountered such difficulties. A large issue of New York City bonds purchased at 102 by the underwriters eventually had to be sold under 100 in order to close out the group, and a large corporate bond issue underwritten at 98 had to be closed out at 80.

The profit to each participant in the purchase group is determined by the nature of the participation, which consists of (a) the securities sold to institutional buyers by the group manager, (b) the securities that the participant has sold itself, (c) the securities that the participant has given up for allotment to selling group members, and (d) the securities in the trading account of the group manager.

Sales to institutional buyers by the group manager are made for the participant's account. The institutional buyer pays the public offering price directly to the group manager, who remits the purchase cost of the securities to the participant. The profit is credited to the account of the participant and retained until the termination of the group.

The securities "taken down" by the participant are delivered to and sold by the participant. The sales price is paid by the buyer

directly to the participant. The difference between the purchase cost and the sale price to buyers represents the profit to the participant. In the instance of securities "taken down" by the participant but sold by it at wholesale to dealers, the profit to the participant is reduced by the reallocation concession granted to the dealer.

The securities "given up" by the participant for sale through members of the selling group are sold to these members by the group manager, to whom the selling group members make payment directly. The manager returns the original purchase cost of the securities to the participant. The participant's account with the group manager is credited with the difference between the purchase cost of the securities and the price paid by the selling group member. The group manager retains this commission until the termination of the group. Securities "given up" to but not sold by the selling group are delivered to the participants on a pro rata basis. Inasmuch as the participant has already paid for those securities, the eventual profit or loss realized on them is the difference between the purchase cost and the eventual sale price. Sometimes those securities are not sold by the participant until after the termination of the group, and then sometimes at a price lower than the cost price.

The securities held in the trading account of the group manager at the termination of the group are pro-rated to the participants. Inasmuch, however, as those securities have been sold once and the participants reimbursed for them, the participants, upon taking delivery, must rebuy them from the group manager at a price approximating the purchase cost to the trading account. The profit or loss that the participant eventually realizes on such securities depends upon the ultimate price at which they are sold.

At the termination of the group, therefore, the manager holds sales commissions of the participants earned on securities sold by the manager to institutional buyers and on securities given up to the selling group. The group manager deducts from those credit balances commissions on securities repurchased by the trading account and redelivered to other dealers as well as the participant's pro rata share of group expenses. The participant's gross profit on the underwriting consists of the commissions realized on the direct sales at wholesale and retail, together with the net credit balance remitted by the group manager. If, on the other hand, the account with the group manager shows a debit balance for which the participant must remit, the gross profit is reduced by

that amount. The compensation to the group manager is in the form of a fee, which may be stated as a specific amount or as a percentage of the security issue. It is paid by the participants pro rata as a part of the group expenses.

**Underwriting stock.** Investment banking houses also underwrite the issue of stock by corporations. A corporation that proposes to raise additional capital through the sale of stock commonly offers the stock first to its present stockholders by the declaration of rights. For example, P. Lorillard Company once offered 374,391 shares of common stock to the stockholders of record as of October 4 at the rate of one share of new stock for every five shares of old stock, at a subscription price of \$14 a share. The rights expired at 3 : 00 P.M., Eastern Standard Time, on October 15. Any stock not subscribed for through the exercise of the rights by October 15 could then be offered to the public. To assure the sale of the stock to the public, the corporation usually arranges to have the issue underwritten by investment banking houses. The underwriters of the Lorillard stock agreed to purchase at \$14 a share all the common stock not subscribed for by the exercise of the stock subscription warrants. The company agreed to pay the underwriters a commission of fifty cents a share for each of the 374,391 shares offered, regardless of the actual number of shares not subscribed for through the rights and therefore taken up by the underwriters. In addition, the company agreed to pay a commission for such shares as the underwriters had to purchase under the agreement in accordance with the following schedule: fifty cents a share if the shares purchased were more than 37,439, and an additional ten cents a share if the shares purchased were more than 187,196. In other words, if all the stock were subscribed for by the exercise of the rights, the underwriters' commission would be \$187,195.50 ( $374,391 \times .50$ ). If the underwriters were obliged to buy all the stock, the aggregate commission would be \$411,830.10 ( $374,391 \times \$1.10$ ).

**Supplementary functions.** The investment banking firm acts in an advisory capacity to both issuer and investor. The firm is in a splendid position to advise an issuer who desires to raise capital through the sale of securities because it is constantly in touch with market conditions and hence is in a position to recommend the type of security that will prove most popular under existing conditions. It is also ready to advise an investor in regard to the suitability of a particular security for his needs or in regard to desirable changes in his portfolio.

The investment banking house may form protective committees for the benefit of clients who hold securities of companies in reorganization. The protective committees seek to arrange the most equitable settlement on behalf of the security holders whom they represent.

The house also services the interests of clients by maintaining a trading department. The trading department has three functions. First, it usually handles the orders to buy and to sell placed by the syndicate manager in "supporting the market" during a distribution of new securities. Second, it provides a "secondary market" for securities that were originally sold by the firm and of which the clients desire to dispose. The department "makes a market" by maintaining bid and asked prices on the issues. Third, if securities are received by the firm on an exchange basis in the purchase of a new issue, the credit allowed the client for the trade-in depends upon the price for which the firm can sell the security through its trading department. The principal function of the trading department is, therefore, to assist the sales department in the distribution of new issues.

Investment banking houses also assist their clients by (a) safeguarding the securities in vaults, (b) collecting interest and dividend payments when so requested, (c) notifying investors of called bonds and of opportunities to profit from sinking fund offers or conversion options, (d) reviewing portfolios with suggestions for improvement, (e) advising clients on income and estate tax problems in connection with security holdings, and (f) providing statistical data on issues and issuers.

**Compensation of security salesmen.** Salesmen are usually compensated by a commission on the securities sold. The commission may be a flat rate per bond or per share of stock, or a percentage of the bond house's gross profit on each security sale. The flat rate of commission varies from \$2 to \$8 per \$1,000 bond and from \$1 to \$5 per \$100 par value of stock. The rate varies according to the quality of the security. A flat rate of \$1.25 per \$1,000 bond is usually paid on municipal issues, which are generally sold in large blocks to institutional buyers and involve relatively little sales effort. The percentage of gross profit method may be either a fixed percentage or a sliding scale. Under the fixed percentage method, the house with a two-point sales commission, that is, \$20 per \$1,000 bond, may allow the salesman 25 per cent of this gross profit, or \$5 per \$1,000 bond. The range has been 20-40 per cent



with an average of 26–27 per cent. Under the sliding scale method, the percentage of gross profit paid to the salesman increases with the aggregate of gross profit that he earns for the house; for example, 20 per cent of a monthly gross profit up to \$1,000; 21 per cent on \$1,000 to \$1,200; 22 per cent on \$1,200 to \$1,400; and so forth. In addition, a bonus may also be paid on sales to new customers or for achieving a specific volume of sales.

### Review Questions

1. Discuss the significance of the Securities Act of 1933.
2. What is meant by a “public offering”?
3. What domestic securities are exempt from registration?
4. Discuss the nature and purpose of the registration statement.
5. Distinguish between an S.E.C. “deficiency statement” and a “stop order.”
6. To what extent does the S.E.C. approve an issue?
7. What is meant by a “prospectus”?
8. Discuss the significance of the prospectus.
9. Discuss the purposes underlying the requirement of registration of an issue.
10. Discuss the civil liabilities under the Act.
11. Indicate the chief function of investment banking.
12. Distinguish between originating, wholesaling, and retailing functions of investment banking houses.
13. Name the functions of investment banking houses.
14. Discuss the significance of private placement of issues.
15. Explain what is meant by competitive bidding.
16. Name the classes of securities sold on a competitive basis.
17. What is meant by an “all or none” bid for a municipal issue?
18. Name the railroad securities exempt from competitive bidding.
19. Name the public utility securities exempt from competitive bidding.
20. What is meant by the sale of securities by private negotiation?
21. Name the objectives of the investment banking house in buying a new issue.
22. Distinguish between the preliminary and the detailed investigation by the buying department.
23. Discuss the significance of the purchase agreement.
24. Name the factors entering into the selection of the participants in a buying group.
25. Describe the chief items in the purchase agreement.
26. Discuss the factors entering into the determination of the public offering price.
27. Discuss the significance of the “escape” clauses in the purchase agreement.
28. What is meant by the “effective date” for the registration statement?
29. Explain the purpose of the twenty-day waiting period.
30. What is the significance of the purchase group agreement?

31. Discuss the significance of the price maintenance clause in the purchase group agreement.
32. Explain the nature and purpose of the "selling group."
33. Discuss the nature of the selling group agreement.
34. Why are selling group commissions retained by the group manager until the termination of the group?
35. Indicate the liability assumed by the members of the selling group.
36. What is meant by the following expressions: (a) take down, (b) give up, (c) opening the books, and (d) oversubscribed?
37. In the retailing of an issue, what is meant by the following expressions: (a) selling off the list, (b) subject order, and (c) firm order?
38. Explain the function of a temporary certificate.
39. Discuss the nature and purpose of "supporting the market."
40. What is meant by a "sticky" issue?
41. Describe the sources of profit to the participants in the purchase group.
42. Explain the underwriting of stock issues.
43. Describe the advisory function of an investment banking house.
44. Explain the protective function of an investment banking firm.
45. Describe the functions of the trading department.
46. Explain the miscellaneous functions of an investment banking house.
47. Discuss the methods of compensating security salesmen.

### Assignment

- (a) Compute the difference, both per bond and aggregate, between the two following bids for a \$40,000,000 issue with a coupon rate of  $3\frac{1}{4}$  per cent: Firm A bid 101.463; Firm B bid 101.424.
- (b) On the basis of the following data on a \$25,000,000 issue, compute, in terms of per bond and aggregate, the price to the public, the underwriting discounts and commissions, and the net proceeds to the issuer: price to the public, 103 45; underwriting discounts and commissions, 1.95 per cent; net proceeds to issuer, 101.50 per cent.
- (c) Determine the effective date for the registration of a foreign government issue and of a domestic industrial issue, both filed on July 26.
- (d) A company issued 545,000 shares of stock through the declaration of rights and agreed to pay the underwriters a commission of 40 cents a share for the entire issue and an additional 25 cents for each share not subscribed for through the rights and purchased by the underwriters. Compute the commission to the underwriters if (1) all the stock is subscribed for through rights; (2) 320,000 shares are subscribed for through rights; and (3) none of the stock is subscribed for through rights.
- (e) Determine the difference in net interest cost to the issuer of a \$10,000,000 thirty-year  $3\frac{3}{4}$  per cent bond between a bid of 100.529 and a bid of 100.271.
- (f) Compute the price to be bid by an investment banking group on a new issue of \$5,000,000 in  $4\frac{1}{2}$  per cent serial bonds maturing uniformly over a twenty-year period, assuming a gross profit margin of 1 per cent and estimating the following sales prices: one year maturity, 4 per cent; two and three years, 4.05 per cent; four and five years, 4.10 per cent; and all later maturities, 4.125 per cent.

- (g) A railroad that offers \$7,500,000 of 1- to 10-year equipment trust certificates received the following bids: Firm A named a price of 99.3799 for a  $1\frac{5}{8}$  per cent coupon, Firm B named a price of 100.015 for a  $1\frac{3}{4}$  per cent coupon. Which is the better bid to the issuer?
- (h) A railroad invited bids on an issue of equipment trust certificates giving the bidders a choice of bidding on \$3,970,000 of certificates representing 80 per cent of the cost of the equipment or on \$3,720,000 of certificates representing 75 per cent of the cost. On either or both of those amounts the bidders could stipulate maturities of one to ten years or one to fifteen years. The following bids were received:
- Group A: 99 $\frac{1}{8}$  for an 80 per cent loan running from one to ten years as 2 per cent certificates.
- Group B: 99.55 for a 75 per cent loan running from one to ten years as  $2\frac{1}{4}$  per cent certificates.
- Group C: 99.76 for a 75 per cent loan running from one to fifteen years as  $2\frac{1}{4}$  per cent certificates.
- Determine the winning bid and explain why.
- (i) A railroad received the following bids on \$25,982,000 of thirty-year first mortgage bonds: Group A named a price of 99 2799 and a rate of  $2\frac{7}{8}$  per cent; Group B, 99 27 for  $2\frac{7}{8}$ 's, Group C, 98 8199 for  $2\frac{7}{8}$ 's. Indicate the winning bid and the difference between the winning bid and the next highest bid.

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## CHAPTER EIGHT

# INVESTMENT POLICIES

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**Investment factors.** In the formulation of an investment policy, the investor is faced with three problems: (a) What are the basic factors in the selection of securities? (b) What are the general investment policies followed by institutional investors? (c) What factors should the individual investor consider? The selection of securities by an investor involves consideration of many factors. Some are applicable only to certain types of securities; others are basic. The basic factors are safety, rate of return, marketability, tax position, and investment timing.

**Safety.** Safety in a security is relative and not absolute. No security is absolutely safe. Securities differ only in the degree of safety. For this reason the investor should seek securities with a degree of safety adequate with relation to his circumstances and requirements.

Safety of principal and safety of income are inextricably woven together. The primary objective of the investor is not merely to preserve the capital but to obtain a return upon it. If the income payment is safe, however, the principal is also safe, since the earning power that provides the income also gives value to the assets securing the principal. Investors have learned by sad experience that inability of the issuer to pay the income adversely affects the value of the principal.

**Rate of return.** The rate of return is called the *yield*; it expresses the relation between the income received and the capital invested. It varies directly with the degree of risk involved. The more speculative the security, the higher is the rate of return, since purchasers of such securities demand additional compensation as a premium for the risk they assume. On the other hand, securities with investment quality yield a low rate of return because the buyers are willing to accept low rates for the greater safety provided. The investor seeking income must assume risks. The amount of income, how-

ever, must be commensurate with the degree of risk that he can afford to assume.

Interest rates represent the return on capital and are determined by conditions of demand for and supply of loanable funds. As those fundamental conditions change, interest rates change, being high at one time and low at another. Inasmuch, however, as the capital market consists of credits of varying durations and of borrowers of varying responsibilities, there is not one interest rate but many interest rates. For convenience the prevailing interest rates are usually divided into the short-term or commercial rate and the long-term or investment rate. Short-term commercial and long-term investment rates tend to move together, but the latter changes less rapidly and within narrower limits than the short-term rate. The investment rate tends to follow a secular trend which is separate from cyclical influences.

The variation in the yields on securities reflects the respective degrees of risk. As a general rule, a low yield on a security reflects a high price and indicates a greater degree of safety, whereas a high yield on a security reflects a low price and indicates a lower degree of safety. Securities are usually classified, on the basis of yield, as highest grade, high grade, good, fair, and speculative. The rate of return on any security represents two elements: cost of capital and premium for risk. However, to determine the specific degree of risk, it is necessary to know the cost of capital. Theoretically the yield on a riskless security would express the cost of capital or the pure rate of interest. In view of the fact that there is no such security, the next best criterion would be a security in which the premium for risk is negligible. Inasmuch as the premium for risk is at a minimum on United States Treasury bonds, their yield is taken as the best approximation of the cost of capital or the pure rate of interest. For example, when United States Treasury 2½'s, due 1965-1970, are selling to yield 2.49 per cent, the pure rate of interest is taken as approximately 2.4 per cent. Since some allowance for risk premium must be made in even the best corporate issue, under these conditions the highest-grade corporate bond should not sell to yield over 3 per cent. On this basis, and with due allowance for degrees of risk involved, the classification would read:

Highest grade . . . . .	under 3 per cent
High grade . . . . .	3-3½
Good . . . . .	3½-4
Fair . . . . .	4-5
Speculative . . . . .	over 5

Obviously, as market conditions change, as reflected in the yield on United States Treasury bonds, the yield range indicated above would change. Generally speaking, the premium for risk should not exceed the pure or basic rate of return. For example, with a basic yield of 2 per cent, a true investment ought not to yield more than 4 per cent.

The use of yield on a security as a criterion of investment quality is subject, however, to certain limitations. Because of the contingent nature of dividends and the greater influence of speculation, yield is less reliable as a criterion of investment quality for stocks than for bonds. Even in bonds, the use of yield is restricted by such features as marketability, maturity, qualification as "legals," tax position, redemption option, and conversion privilege. A security with a high degree of marketability usually sells at a higher price and yields a lower rate of return than a security with a lower degree of marketability. Inasmuch as a security with an earlier maturity is more liquid and less subject to future contingencies than a security with a later maturity, the former usually sells at a lower yield. Securities that are eligible for purchase by fiduciary investors (savings banks, trustees, and life insurance companies) enjoy an artificial market and for this reason sell at low yields. The income tax liability exemption enjoyed by some securities accounts for their higher price and lower yield. Inasmuch as the call price of a redeemable bond tends to set a ceiling to its market price, a callable bond may sell at a higher yield than an equally good non-callable bond. In like manner, a convertible bond may sell at a lower yield than other equally good non-convertible bonds of the same issuer.

**Marketability.** Marketability in a security refers to the degree of readiness with which it may be converted into cash without sacrifice of value. Marketability, like safety, is a relative term. Securities are not classified as marketable or non-marketable but rather according to the degree of marketability. The degree of marketability may be measured by the ease with which a quotation can be secured on the security, by the spread between the bid and asked prices, and by the volume available. The greater the ease in obtaining the quotation, the narrower is the spread; the greater the volume available, the greater is the degree of marketability.

The degree of marketability in a security is affected by such factors as popularity, listing, distribution, eligibility for purchase by fiduciary investors, seasoning, and tax-exempt privilege. Stocks

are popular in a period of prosperity just as bonds are popular in a period of depression. Popular interest in the securities in one field may be rising at the same time that interest in the securities in another field may be declining. A traditional phenomenon of a major upward movement in the market is the rotation in leadership from one group to another. After entering new high ground, one group often recedes on profit taking and at least temporarily becomes inactive. Such switching of interest often arises from the fact that investors, statisticians, and traders who are watching the market often find groups which they believe are behind the market as a whole. For example, when the market advance in a recent year was largely in automotive, radio, and amusement stocks, traders were looking into chemical, copper, oil, airplane manufacturing, rail, and rail equipment stocks in the search for laggards. A similar phenomenon, but in reverse, often marks a bear market. Sometimes, however, this practice results in unprofitable buying or selling, as often there are good reasons why some groups fail to rise or fall as fast as the "averages."

Securities listed on an exchange are generally considered more marketable than those traded over-the-counter. A large issue is usually more widely held than a small issue. Securities issued by strong companies generally have a high degree of marketability. Since financial institutions are collectively the largest buyers of securities, issues that are eligible for purchase by them enjoy a very high degree of marketability. Securities that have been outstanding for some time and have established their market are regarded as "seasoned" and enjoy greater price stability and hence marketability than new issues. The so-called "blue chips" of today were the speculative securities of obscure companies in earlier years. As they went through the process of achieving nationwide distribution and recognition and as the soundness of the companies was more generally recognized, the securities attained the status of "blue chips." Securities enjoying income tax liability exemption have an especial appeal to wealthy investors and, as a result, have a high degree of marketability.

An adequate degree of marketability is significant to all investors, since emergencies may arise that would require immediate liquidation of security holdings. Marketability, however, "costs money" in that the more marketable the security, the higher is the price and the lower is the yield. Thus it is not logical for an investor to purchase a higher degree of marketability than he needs.

**Tax position.** Taxation of income and of capital gains has become a very important consideration to the investor. Investors are subject to federal and, in some cases, state taxes on income. In addition, estates are subject to taxation by both federal and state governments. A federal tax is levied on personal incomes and on the income from trusts and estates. The total federal income tax consists of a normal tax and a surtax. Both taxes are based upon the taxable net income but differ in respect to exemptions and rates.

The taxable net income includes capital gains on such capital assets as stocks, bonds, and other securities held for investment or speculation, on land, or on any other property owned by the investor, with certain exceptions. A distinction is made between a short-term capital gain and a long-term capital gain. This distinction is important to the investor, since a short-term gain is subject to heavier taxation than a long-term gain.

The income from certain federal government securities enjoy varying degrees of income tax exemption. They may be classed as those the interest on which is (a) fully tax-exempt, (b) exempt from the normal tax but subject to the surtax, and (c) subject to normal tax and surtax. The fact that some bonds are tax-exempt while others are fully taxable presents a problem for the investor. In considering the two types of bonds, the investor must give consideration to the greater yield required on a taxable bond to yield, after taxes, a return comparable to that on a tax-exempt bond: Assuming the purchase of both a tax-exempt bond and a taxable bond at or near par value to yield rates closely approximating their coupon rates, an investor with a taxable income of \$2,000 who is subject to a combined normal and surtax rate of 23 per cent would require a yield of 2.6 per cent on a taxable bond in order to obtain a return equivalent of 2.0 per cent on a tax-exempt bond. To obtain the same return on a tax-exempt bond (2.0 per cent), an investor in the highest tax bracket (94 per cent combined normal and surtax with a taxable income over \$200,000) would require a taxable bond yielding 33.33 per cent.

Investors must also consider the federal and state estate taxes. The federal tax is upon the transfer of the property and applies even though the property itself is free from all taxation or is not subject to taxation by the federal government. It is payable on the net estate, which is the excess of the gross estate over certain allowable deductions specified in the law. A credit is allowed for estate and inheritance taxes paid to states, but this credit may not



exceed 80 per cent of the federal tax. The federal government also imposes a tax on gifts, whether in trust or otherwise, direct or indirect, and whether the property is real or personal, tangible or intangible. A transfer for an inadequate consideration is treated as a gift to the extent of the inadequacy. In addition, many states also impose an estate tax.

**Investment timing.** Investment timing involves two factors: when to buy and at what price to buy. Investment values are affected by changing business conditions. Regardless of the inherent quality of a security, its purchase is not advisable at all times and at all prices. The swing of the business cycle through the successive stages of prosperity, liquidation, depression, and recovery is continuous and inevitable. Stock prices are influenced primarily by corporate earnings, rising as corporate earnings increase and declining as earnings fall. Obviously, the purchase of common stocks in the latter part of a period of prosperity is inviting the disaster that comes with liquidation and depression.

Changes in the prices of high-grade bonds are influenced largely by the trend of interest rates. Bond prices decline as interest rates rise and rise as interest rates decline. A high-grade bond with a coupon rate of  $4\frac{1}{2}$  per cent is worth par in a  $4\frac{1}{2}$  per cent market, more than par in a 4 per cent market, but less than par in a 5 per cent market. For this reason, for example, the purchase of a relatively short-term bond is more advisable than a long-term bond when interest rates are abnormally low. Such purchase is based upon the fact that (a) the closer a bond is to its maturity, the more stable is its price, and (b) the inevitable rise in interest rates will cause bond values to decline. The longer the maturity of a high-grade bond, the greater will be its relative decline in value. For example, a  $3\frac{1}{2}$  per cent bond is worth par in a  $3\frac{1}{2}$  per cent market. Should the market rate rise to  $4\frac{1}{2}$  per cent, however, the  $3\frac{1}{2}$  per cent bond would decline in value. The extent of the decline in value is influenced by the maturity of the bond as evidenced by the following table, which indicates that the longer the bond has to run to maturity, the greater is the percentage decline in value:

<i>Maturity</i>	<i>Value</i>	<i>Percentage Decline</i>
10 years	92.02	7.98%
15 "	89.18	10.82
20 "	86.90	13.10
30 "	83.63	16.37

Low-grade and speculative bonds normally tend to move in response to the business cycle. When investors are optimistically confident about the general business outlook, they tend to consider junior bonds as being nearly as safe as those that are fully secured by first mortgages on highly valuable properties. Under those conditions, prices of second-grade bonds are bid up until their yields are not much greater than those of the highest-grade bonds. On the other hand, when the prospects for business become discouraging, investors seek safety rather than income, and then the prices of the second-grade bonds fall below those of the highest-grade issues; and, as a result, the yields of the less-secured bonds become much larger than those of the well-secured bonds. When confidence was at its height in 1927, bond prices were high and yields were low. The combined yield of thirty highest-grade issues was 4.46 per cent while that of thirty second-grade issues was 5.32 per cent. At the bottom of the depression in 1932 both classes of bonds had suffered declines in price, but the decline in prices of the second-grade bonds was so much greater than those of the highest-grade bonds that their yields were over twice as great as those of the highest-grade bonds.

Market quotations are influenced by three factors: (a) fundamental conditions, (b) technical position, and (c) psychological considerations. Fundamental conditions include the state of business, earnings, dividends, financial positions, management, and money rates. The technical position of the market refers to the tendency for the market to be either over-bought or over-sold. A protracted rise or fall in the market has a tendency of carrying too far with the consequent corrective movement. An over-bought market is the result of substantial buying which has carried prices higher than justified. It is technically weak and subject to a corrective movement. On the other hand, an over-sold market is the result of substantial selling which has carried prices lower than justified. It is technically strong and subject to a corrective movement. In the fall of 1936 the market was over-bought; the corrective movement resulted in the market being over-sold, and by the winter of 1937 the market was again over-bought. Psychological considerations reflect the general feeling of confidence or the other extreme, apprehension. At one time technical position may dominate the market regardless of the fundamental state of affairs, while at another time psychological considerations may bear the greatest weight.

As there is a time to buy, so likewise is there a time to sell. Sales as well as purchases must be timed. Timing has been aptly described as:<sup>1</sup>

For every investor, sound investment procedure requires a series of separate but related decisions in each of which "risks and rewards" must be weighed. Of these decisions, all investment experience proves that "when to buy" ranks equally in importance with "what to buy." Similarly, the alert investor will recognize that there is no security which can be "bought and forgotten" and that successful investment requires keen judgment in timing sales as well as purchases.

**Investment program.** Investors may be divided roughly into two classes: institutional and individual. The former consist of trustees, savings banks, commercial banks, life insurance companies, and fire and casualty insurance companies. They comprise the most important part of the investment market. Because of their fiduciary position, their investment policy is subject to state supervision, except in the instance of national commercial banks, which are subject to supervision by the federal government. The individual investor, on the other hand, is unrestricted by law and free to select any security he desires.

As a general rule, however, the degree of success achieved in the investment of funds varies directly with the care exercised in the selection and supervision of the securities. The formulation of an investment program for any investor, institutional or individual, involves (a) the determination of the investor's investment objective, (b) the selection of the securities in conformance with that objective, and (c) the supervision of the fund.

### Institutional Investors

**Trustees.** A trust fund is administered by a trustee appointed by the maker of the trust. The parties to a trust are the trustor or maker, who creates the trust, the trustee into whose hands the management of the trust is entrusted, and the beneficiary for whose benefit the trust is established. There are four essential elements of a valid trust of personal property: (a) a designated beneficiary, (b) a designated trustee who must not be the beneficiary, (c) a fund or other property sufficiently designated or identified to enable title thereto to pass to the trustee, and (d) the actual delivery of the fund or other property or of a legal assignment thereof to the trustee, with the intention of passing legal title thereto to him as trustee.<sup>2</sup> The beneficiaries under a trust fund may be classed as

<sup>1</sup> Merrill, Lynch, Pierce, Fenner & Beane, *Security and Industry Survey*, May, 1945.

<sup>2</sup> Brown v. Spohr, 180 N. Y. 201 (1904).

life-tenant and remainderman. The life-tenant is entitled to the income from the trust during the life of the trust, and the remainderman is entitled to the principal upon termination of the trust. A trust may be a voluntary (living) trust or a testamentary trust. The former becomes operative at any time; the latter is created by a will and comes into operation upon the death of the trustor.

The trustee appointed under a deed of trust may be either a personal trustee or a corporate trustee. Although a personal trustee has a degree of personal interest in the trust fund not generally found in a corporate trustee, the appointment of a personal trustee involves such limitations as limited financial responsibility and the contingency of death, absence, or incapacity. As a result of those disadvantages and the increasing complexity of security investment, the trend in recent years has been toward the appointment of a corporate trustee.

The investment policy of a trustee under a testamentary trust is guided by such provisions as the creator of the trust laid down in the documentary instructions. The instructions of the trustor must be followed, but in some cases they have handicapped the trustee in effective management of the fund. Such restrictions have taken many forms, such as limiting the investments to the bonds of a specific industry, or requiring the retention of certain securities which prudence would dictate selling, or omitting to give the trustee power to purchase certain securities which in his judgment would be appropriate in the light of current investment conditions. The sole recourse of the trustee is to the courts for relief.<sup>3</sup>

In the absence of documentary instructions, the trustee is bound by the laws governing the investment of trust funds effective in the state of jurisdiction. Most states, including New York, provide that where the trustor does not specify the type of securities to be held, the trustee must invest in "legal" issues. The law of the state specifies the qualifications that a security must possess to be eligible for the investment of trust funds. A list of such "legal investments" is generally promulgated by a responsible state official and is applicable to savings banks and trustees.<sup>4</sup> The General Banking Law

<sup>3</sup>The trustees of Leland Stanford University petitioned the Superior Court of San Jose County, California, in 1936, for leave to invest in common stocks. While there was no specific prohibition against that type of security, the trustees felt that they might be excluded by the nature of the trust itself. Influenced perhaps by the popular belief in 1936 that a hedge against inflation of commodity prices was desirable, the court granted the petition.

<sup>4</sup>See page 170 for qualifications of securities eligible for investment by savings banks.

of New York State (Section 35), for example, requires the Superintendent of Banking to compile and publish, not later than July 1 of each year, a list of state, municipal, railroad, gas, electric, and telephone obligations which, if legally issued and properly executed, conform with the provisions of the law.

In some instances, the trustee has discretionary powers which arise either from the deed of trust or by virtue of the absence of both documentary instructions and a state law governing the investment of trust funds. Discretionary trusts are those which give to the trustee full discretion in the retention or sale of any securities received at the time the trust was created and in the subsequent purchase and sale of securities. The testamentary trust set up under the will of H. P. Whitney granted "absolute discretion, without regard to the restrictions placed by law." On the other hand, in the absence of documentary instructions and a state law governing the investment of trust funds, the trustee may exercise broad discretionary power. In a discretionary trust or one giving rise to discretionary powers, the trustee is not restricted to "legal" investments; he is required nevertheless, in most states, to "conduct himself faithfully and exercise a sound discretion." This is known as the "American rule," which was expressed by the court as follows:

He is to observe how men of prudence, discretion and intelligence manage their own affairs, not in regard to speculation, but in regard to the permanent disposition of their funds, considering the probable income, as well as the probable safety of the capital to be invested.<sup>5</sup>

The trustee is financially as well as morally obligated to fulfill his trust. He is personally responsible for his acts and may be surcharged for any losses in the trust fund arising from carelessness or fraud. His liability extends to losses to the trust fund incurred by either investing in securities other than those authorized by the deed of trust or, in the absence of instructions, in securities other than those authorized by law. The trustee cannot even follow the "legal list" blindly. If a security is included in the list in error or if the status of the security changes, the trustee cannot set up the defense that the security was on the legal list. The list is merely suggestive and is provided as a courtesy. The law in New York State, for example, specifically provides that "the superintendent

<sup>5</sup> *Harvard College v. Armory*, 9 Pickering 446 (1830). States which, in the past few years, have adopted this rule, variously known as the Massachusetts or "prudent man" or "American" rule, include California, Delaware, Connecticut, Minnesota, Maine, and Texas.

shall be in no way liable for the omission from or inclusion in such list of the name of any state or municipality or of any bond or obligation." The trustee, however, is liable if the law is not strictly complied with, regardless of the acts of a state official in compiling such a list.

The investment problem of a trustee is complicated by the fact that he must give consideration to the interests of the trustor who created the trust, the life-tenant who is entitled to the income from the trust and the remainderman who will receive the corpus of the trust at the expiration of the trust. These interests frequently conflict. The life-tenant usually desires as high a rate of return as might reasonably be expected, whereas the remainderman wishes the original principal kept as nearly intact as possible. The trustee is faced with the problem of following a middle course, concentrating neither on the highest-grade issues with low yield to the detriment of the life-tenant nor on the low-grade issues with high yield to the disfavor of the remainderman. In general, the objective of the trustee is preservation, not accumulation.

Two special types of trust which have become increasingly popular are the life insurance trust and the common trust. The life insurance trust is one under which the proceeds of life insurance policies form the corpus of the trust which is entrusted to a trust company as trustee for the benefit of the beneficiary under the policies. A common trust is one in which several small trusts, which suffer the handicap of relatively high costs of administration and inadequate diversification, are combined under the law of the state for the purpose of attaining economy and efficiency in administration. Common trusts have been authorized in Alabama, Illinois, Indiana, Kentucky, Louisiana, Massachusetts, Michigan, Minnesota, New York, Ohio, Pennsylvania, South Dakota, Tennessee, and Wisconsin. In New York State the maximum participation of any one fund is restricted to \$50,000, and funds may not participate in a common trust if any assets in the trust are illegal for the fund to hold, nor may the common trust invest in securities not eligible for purchase by savings banks.<sup>6</sup>

**Savings banks.** Savings banks have been established to safe-

<sup>6</sup> The Marine Midland Trust Company of New York established a common trust fund in the state of New York in 1944 under a trust indenture which was discretionary in nature. The trustees were permitted to exercise the investment powers engaged by the fiduciaries under the prudent man rule. The initial investments of the Midland Discretionary Common Trust Fund were to be 40 per cent in bonds, 30 per cent in preferred stocks, and 30 per cent in common stocks.

guard the savings of people of limited means. The state laws under which mutual savings banks operate generally specify a limit to the total deposit which these banks may accept for an individual savings account. New York State, for example, sets the limit at \$7,500. This limitation is designed to assure that only truly savings accounts will be received and to safeguard the banks against a sudden sharp contraction of deposits.<sup>7</sup>

The deposits in a savings bank are time deposits; that is, depositors may withdraw deposits only by giving the bank advance notice, which ranges from 30 to 90 days in the various states. For this reason, savings banks invest in long-term obligations of limited marketability which are adequately safe and which yield a higher rate of return than is normally obtained from short-term liquid obligations. Savings banks are permitted by law to invest only in "legal investments." The specific qualifications which a security must meet to be classed as a "legal investment" differ in the various states, but the common attribute sought in the securities is safety of principal. New York State is considered to have the highest standards of eligibility and has more or less set the pattern for other states. In New York State the legal list consists of United States Government obligations; state and municipal bonds; bonds and mortgages on real estate; New York State and Federal Land bank bonds; Federal Home Loan bank bonds; Housing Authority bonds; railroad, electric, and gas company, telephone company, and industrial company bonds; and bankers' acceptances.

Savings banks may invest in the obligations of the United States Government for which the faith of the government is pledged to provide for the payment of principal and interest. Obligations of New York State which have been legally issued are eligible. Obligations of other states are eligible provided the state has not been in default in its bonds since 1878. Bonds of the state of Arkansas, for example, were removed from the "legal list" on December 1, 1933, after the state had defaulted on its obligations.

The direct obligations of municipalities in New York State are eligible. Obligations of municipalities in adjoining states are eligible provided the municipality (a) has a minimum population of 10,000; (b) had no default for more than 120 days in the payment of either interest or principal within the past 25 years; and (c) has a debt

<sup>7</sup> This restriction may be circumvented to some extent by individuals who establish accounts either in the same bank in the name of different members of the family or in different banks in their own name.

ratio not in excess of 12 per cent. Obligations of municipalities in other states are eligible provided the municipality (a) has a minimum population of 30,000; (b) has been incorporated for at least 25 years; (c) has had no default for more than 120 days in the payment of either interest or principal within the last 25 years; and (d) has a debt ratio not in excess of 12 per cent. Municipalities with a population of less than 45,000 must not have a tax limit. Those with a population of at least 250,000, assessed valuation of at least \$200,000,000, and no tax limit are not subject to the debt-ratio restriction. Bonds issued after December 31, 1938, by a municipality must not be subject to any tax-limit legislation which does not exclude debt service.

Railroad mortgage bonds including equipment trust obligations, direct or assumed, of certain domestic railroads are eligible provided the company (a) has at least 500 miles of line; (b) has had revenues of at least \$10,000,000 each year for at least five out of the last six years; (c) has earned fixed charges at least  $1\frac{1}{2}$  times in the previous year and in five out of the last six years; (d) has paid cash dividends equal to one quarter of the fixed charges or, if no dividends were paid, earned fixed charges at least  $1\frac{1}{2}$  times in the previous year and in nine of the last ten years; and (e) has had no default in the past six years. Debenture bonds are eligible provided the company has (a) earned fixed charges at least twice in the previous year and in five out of six previous years, and (b) a net income of \$10,000,000 after all charges have been deducted. Collateral trust bonds are eligible provided they (a) are secured by bonds which are legal investments, (b) have a maturity of the collateral not earlier than the maturity of the collateral trust bond, and (c) have a total face amount greater than that of the collateral.

Mortgage bonds of certain domestic electric and gas companies are eligible provided the company has (a) annual operating revenue of at least \$1,000,000, (b) earned fixed charges at least twice in the previous year and on an average basis for the last five years, and (c) a balance available for dividends of at least 4 per cent on two thirds of the funded debt. Those bonds must be part of a minimum issue of \$1,000,000 and represent a first or refunding mortgage not exceeding 60 per cent of the value of the physical property pledged.

Mortgage bonds of certain domestic telephone companies are eligible provided the company (a) has annual operating revenues of at least \$5,000,000; (b) has earned fixed charges at least twice



in the previous year and on an average basis for the five previous years; and (c) has a balance available for at least 4 per cent on the outstanding stock. The bonds must be part of a minimum issue of \$5,000,000 and represent a first or refunding mortgage not exceeding 60 per cent of the value of the physical property pledged.

Industrial bonds became eligible for the first time in 1938 as the result of an amendment to the law. Twenty savings banks, or a savings bank trust company all of whose stock is owned by at least twenty savings banks, may recommend to the State Banking Board the admission to the list of a specific industrial bond.<sup>8</sup> The bond may be declared eligible by a two-thirds vote of the Board. Any authorization may be revoked, however, by a majority vote. In 1945 some thirty industrial bonds were eligible by authorization of the New York State Banking Board.

Bonds and mortgages on unencumbered real estate situated in New York State are eligible provided the mortgage does not exceed 60 per cent of appraised value on non-residential property and 66 $\frac{2}{3}$  per cent on residential property, with the exception of bonds and mortgages insured by the Federal Housing Administration. Savings banks are also permitted to invest in housing corporations formed to undertake multi-family projects. Under regulations prescribed by the State Banking Board in 1945 (a) every project must be a multi-family rental housing project designed to accommodate not less than 250 families at an average rental of not more than \$25 a room a month; (b) at least three savings banks must participate in every undertaking; (c) no one savings bank can finance more than 40 per cent of the total cost of any one project; (d) no savings bank can invest an amount greater than 1 per cent of its assets or 10 per cent of its surplus in any one project; (e) savings banks must amortize their investment at the rate of at least 2 $\frac{1}{2}$  per cent a year; (f) no housing corporation can undertake more than one housing project; and (g) housing projects can be undertaken by savings banks only in real property owned in fee.

No stocks of any kind, either preferred or common, nor foreign securities of any description may qualify as legal investments for savings banks in New York State.

The list of eligible securities is changed from time to time. Securities which are not on the list but which have become eligible are added to the list and other securities which are on the list but which

<sup>8</sup> The Banking Law of New York State provides for a Banking Board consisting of nine members and a Superintendent, who is chairman and executive head.

because of changes in the condition of the issuer are no longer eligible are removed from the list.<sup>9</sup> Banks holding a security that is removed from the list are restrained from further purchases of the security and are given a reasonable time in which to dispose of current holdings of the security.

The New York law is regarded by many as the most modern of the savings bank investment statutes; nevertheless, experience has demonstrated that changing conditions affect investment values. The evolution of the legal list has involved a widening of the selection of eligible securities and a continuous revision of the required qualifications. During the period 1863-1893 eligible investments were limited to securities of the United States, New York State and other states, and New York State municipalities, and to bonds and mortgages on improved New York real estate. Issues of a few specifically named cities outside of New York State were added to the list in 1893. Specifically named railroad bonds first became legal in 1898. The practice of naming the particular municipal or railroad bond ceased in 1905 and a general law was passed authorizing investment in the bonds of all cities and railroads which complied with the specific requirements set forth in the law. Public utility bonds and railroad equipment issues became eligible in 1928. In 1938 eligibility was given for the first time to securities of any sort approved by the Banking Board. Under this provision certain public utility and industrial debentures have since been legalized by action of the Board. At various times certain obligations of tax districts, authorities, land banks, mortgage banks, Federal Housing Administration as well as bankers' acceptances and certain real estate bonds have been made eligible by special acts.

The qualifications for eligibility have also been the subject of revision. The municipal subdivision was rewritten in 1928 and the railroad subdivision in 1929, both revisions involving a radical change in the fundamental principles governing the selection of eligible securities. To prevent decimation of the list in 1931, the criteria applicable to eligible railroad investments had to be suspended. Again in 1938 the less favorable conditions under which the railroads were operating made it necessary to reduce the requirements applicable to new investments in railroad bonds.

The Banking Law of New York State requires the Superintendent of Banks to mail to each savings bank annually a list of the securities

<sup>9</sup> Eligible securities that have been called for redemption or that have matured are removed from the list as a matter of course.

which, in his judgment, if legally issued and properly executed, conform to the legal requirements for savings bank investment. The fact that a security appears on the list, however, does not indicate that the Banking Department considers it a proper investment, under all circumstances, for the funds of any individual savings bank. The purchase of any particular security on the list is a matter for each bank to determine. It is the intention of the law to give only a list of bonds which are legal at the time the Superintendent of Banks makes his investigation. The Superintendent is in no way liable for the omission from or inclusion in the list of the name of any state or municipality or of any bond or obligation. The trustees of a savings bank are not relieved of the duty of making a careful investigation on their own part into the legality of the issues which appear on the list.

**Commercial banks.** Commercial banks, in contrast to savings banks, receive both time and demand deposits. Demand deposits represent approximately 75 per cent of the total deposits of commercial banks. The large demand deposits held by commercial banks makes it necessary for the banks to maintain a higher degree of liquidity of assets than savings banks.

The investments of commercial banks are subject to regulation by the Comptroller of the Currency in the instance of banks which are members of the Federal Reserve System or by the state authority in the instance of state banks which are not members of the Federal Reserve System. In general, commercial bank investments are restricted to bonds and to a maximum of 10 per cent of capital and unimpaired surplus in the securities of any one issuer. The regulations of the Comptroller of the Currency require that bonds purchased by member banks must be marketable according to the following definition:

Under ordinary circumstances, the term "marketable" means that the security in question has such a market as to render sales at intrinsic values readily available.

The minimum requirements for marketability are: (a) the issue is sufficiently large to make marketability possible; (b) public distribution of the security either has been provided for or made in a manner to protect or insure marketability, or other existing securities of the issuer have such a public distribution as to protect or insure the marketability of the issue under consideration; and (c) the security is registered under the Securities Act of 1933, unless exempt. If the security is issued under a trust agreement, the

agreement must provide for a bank or trust company as trustee who is independent of the obligor.

A joint statement of agreement of revision of the procedure in bank examinations has been issued by the Secretary of the Treasury, the Board of Governors of the Federal Reserve System, the Directors of the Federal Deposit Insurance Corporation, and the Comptroller of the Currency. The section relating to the appraisal of bonds provides for four divisions. Group I, consisting of marketable obligations in which the investment characteristics are not distinctly or predominantly speculative, includes securities of the four highest grades and unrated securities of equivalent value, which are valued at cost less amortization, if any. Appreciation or depreciation in market value is disregarded. Group II, comprising securities in which the investment characteristics are distinctly or predominantly speculative, includes securities below the four highest grades and unrated securities of equivalent value, which are valued at the average market price for the eighteen months just preceding the examination. Group III consists of securities in default which are valued at the lower of cost or market. Group IV consists of stocks, valued at the lower of market or cost.

The investments of state banks that are not members of the Federal Reserve System are supervised by the state of incorporation.

**Life insurance companies.** Life insurance companies underwrite risks for which they are paid premiums. They must set up reserves over an extended period to meet death claims, endowment maturities, or annuities. Since their liabilities are essentially long-term, in general they have followed an investment policy of selecting long-term issues. A high degree of marketability in a security is not especially necessary because of the steady receipt of cash by the company in the form of premium payments and investment income. In addition, the well-spaced arrangement of maturities of investments provide adequate cash holdings at all times. Changes in the purchasing power of the dollar do not affect the payment of claims, since the contracts are for a definite number of dollars.

Gross premiums on life insurance policies are determined by an assumed rate of return on the investment of funds, the mortality table, and the expenses of operation. The usual assumed rate of return on investments has been 3 per cent. The steady decline in interest rates on prime investments in recent years, however, has led many of the insurance companies to adopt a lower interest basis to insure maintenance of ample margins of safety behind the com-

pany's policies. The Metropolitan Life Insurance Company and the Prudential Insurance Company of America have reduced the interest basis to  $2\frac{3}{4}$  per cent, while the New York Life Insurance Company has adopted a  $2\frac{1}{2}$  per cent interest basis.<sup>10</sup>

The fact that life insurance is intimately connected with the lives and savings of individuals has made the investments of the companies subject to regulation by the states. The investments of life insurance companies in New York, for example, are limited to:

- a. Government obligations. federal, state, and municipal.
- b. Collateral trust bonds on which the fixed charges have been earned at least one and a quarter times during each of any three years, including the last two years, of the last five years.
- c. Debenture bonds on which the fixed charges have been earned at least  $1\frac{1}{2}$  times during the last five years, including the last year.
- d. Adjustment, income, or other contingent interest obligations, provided the average annual fixed charges and average annual maximum contingent interest has been earned at least  $1\frac{1}{2}$  times during the last five years, including the last two years.
- e. Preferred or guaranteed stocks on which the aggregate fixed charges, contingent interest, and preferred stock dividend requirement has been earned at least  $1\frac{1}{2}$  times during the last five years, including the last two years; such investments are limited to 10 per cent of the stock of the issuer and to 2 per cent of the admitted assets of the insurance company.
- f. Trustees' or receivers' obligations.
- g. Railroad equipment trust obligations.
- h. Bank acceptances and bills of exchange eligible for purchase in the open market by Federal Reserve banks.
- i. First mortgage bonds on improved unencumbered real property located in the United States not exceeding two thirds of the value of the property. Mortgage loans may exceed two thirds of the value of the property if guaranteed under the "Servicemen's Readjustment Act of 1944." Mortgage loans on any one property are limited to \$25,000 or 2 per cent of total admitted assets, whichever is greater; total mortgage loans may not exceed 40 per cent of total admitted assets.
- j. Purchase money mortgages.
- k. Bonds guaranteed or insured by the Federal Housing Administration under the "National Housing Act."
- l. Real estate.
- m. Canadian government bonds up to 10 per cent of total admitted assets.
- n. Other foreign bonds up to  $1\frac{1}{2}$  times the company's reserves.
- o. Stock or debentures of any housing company organized under the public housing law of the state.
- p. Stock of a Federal Home Loan bank.

The changes in the diversification of investments by life insurance companies is evidenced by the following investments of forty-nine United States legal reserve companies as reported by the Association of Life Insurance Presidents:

<sup>10</sup> According to the Mortgage Bankers Association of America, the fifteen largest life insurance companies obtained a return of 4.4 per cent from mortgages against 2.9 per cent from bonds in 1943.

	1930	1935	1940	1945
Mortgages: . . . . .	40 5	23 2	18 9	14 1
Farm . . . . .	10 9	4 6	2 8	1 6
Others . . . . .	29 6	18 6	16 1	12 5
Government bonds: . . . . .	7 7	20 5	27 7	51 1
United States Government . . . . .	1 8	12 7	19 4	46 9
State, county, municipal . . . . .	3 4	5 5	6 3	1 4
Canadian . . . . .	2 3	2 2	2 0	2 8
Other foreign government . . . . .	2	1		
Bonds and stocks. . . . .	29 9	27 2	31 8	24 9
Railroad . . . . .	17 1	13 4	10 6	7 1
Public utility . . . . .	9 7	10 1	14 9	12 2
Others . . . . .	3 1	3 7	6 3	5 6
Total bonds and stocks . . . . .	37 6	47 7	59 5	76 0
Policy loan and premium notes . . . . .	14 5	14 9	9 7	4 2
Real estate . . . . .	2 4	8 2	6 5	1 8
Collateral loans . . . . .	1			
Cash . . . . .	7	3 6	3 3	1 5
Other admitted assets . . . . .	4 2	2 4	2 1	2 4
	100 0%	100 0%	100 0%	100 0%

During the period 1930-1945 life insurance companies decreased their investments in mortgages and in railroad bonds and stocks and increased their investments in government bonds, principally United States Government bonds, and in public utility and other bonds and stocks.

**Fire and casualty insurance companies.** Fire and casualty insurance companies, like life insurance companies, underwrite risks, for which they are paid premiums. They differ from life insurance companies, however, in four respects: (a) the policies are for short periods (generally one and seldom more than five years) and for losses which may not materialize; (b) their liability terminates at the expiration of the policy and the reserve which has accumulated belongs to them; (c) they are subject to sudden, large claims; and (d) they depend upon investment income to cover underwriting losses and dividend distribution.<sup>11</sup> The investment policy of the fire and casualty insurance companies is influenced by those factors. The short-term obligations which they may be called upon to meet make liquidity most important and necessitate investment chiefly in securities of high marketability. On the other hand, the need for adequate investment income makes yield and appreciation essential.

Fire and casualty insurance companies are almost unrestricted by law in the selection of securities. The limited legal restrictions

<sup>11</sup> Life insurance companies are usually mutual, whereas fire and casualty companies are generally stock organizations.

in New York State apply to investments constituting minimum capital requirements, which are restricted to United States Government, state, and local municipal obligations and to reserve investments which must equal in value 50 per cent of the combined unearned premium and loss reserves and must be invested in securities eligible for purchase by life insurance companies. Beyond those limitations, the law in New York State permits them to purchase any income-producing securities.

### Individual Investor

**Introduction.** Institutional investors are strictly regulated by law in most states, and their purchases of securities restricted to obligations defined as "legal investments." While those "legals" vary from state to state, as a class they include only those types of securities in which greater emphasis is placed upon safety of principal than upon adequacy of income. The individual investor, on the other hand, faces an entirely different situation. He is unrestricted by law and free to select any security he desires. He may confine his investments to "legals" in the belief that he is achieving safety of his principal, but he does so at the expense of income. The artificial market enjoyed by "legals" makes them extremely high in price and low in yield. They provide a higher degree of safety than is needed by most individual investors and at a disproportionate cost.

The freedom of the individual investor from legal restriction is at once a privilege and a responsibility. The problem of investment would be considerably simplified if the investor could follow a model portfolio selected by competent authority for the "average" investor. The "average" investor, however, is entirely mythical. Every investor has an individual problem.

**Investment objective.** In managing their portfolios, some investors are seeking primarily appreciation in value, others stress income, still others emphasize safety of principal. The individual investor must give consideration to the following factors in determining his investment objective: (a) his financial position, which involves such factors as his age, number of dependents, life insurance carried, cash reserve, and current and prospective non-investment income; (b) the degree of risk which he can justifiably assume; and (c) the income required from the investment of his funds. No investor should contemplate the purchase of bonds or stocks unless and until he has established a basic portfolio consisting of adequate

life insurance, a sufficient savings bank deposit and some United States Savings bonds. Life insurance is vitally necessary for the investor who has dependents and whose income consists primarily of earnings. Life insurance companies offer many types of insurance policies, but the two most common forms are the straight life and the endowment. The basic purpose of the former is to provide protection and the latter to combine saving with protection. If the former is placed with a mutual company and the "dividends" allowed to accumulate with the company, the straight life policy assumes the nature of an endowment. In either case the investor has created an estate which increases in value each year and against which he may borrow at any time. A backlog of savings and Government bonds is needed to provide for emergencies.

If the investment of funds were simply a matter of selecting securities which provide an income, it would be a relatively simple task. What makes it difficult, however, is the necessity of obtaining not merely an income but an income sufficient to compensate for risks. To do this, income and risks must be weighed critically, one against the other, in the scales of personal circumstances and requirements. An investment program appropriate for a retired man of advanced years should differ radically from that for a young man engaged in business. A portfolio composed largely of high-quality bonds may be entirely suitable for the former but wholly unsuitable for the latter. The one is constrained to place major emphasis on capital conservation, while the other can prudently shoulder risks in order to avail himself of possibilities for capital accumulation. The prudent man, in the investment of his savings as in his general mode of living, must act his age; that is, his age determines what he eats, what he does, and what securities he purchases. Moderation in manner of life and in investing becomes increasingly necessary as he advances in years. An elderly man of limited means in investing his funds is constrained to exercise conservatism and to minimize risks, on the one hand, and to stress safety of principal and stability of income on the other. Health and life expectancy are important factors in the formulation of an investment program for the man of mature years. He must also base his program on the number of years he is likely to remain gainfully employed. The longer he can count on his salary, the less he need depend on his securities and, consequently, the broader will be his scope for assuming investment risks. The older he becomes the greater conservatism he must exercise and the more he must



switch his objective to the provision for dependents. A young man with ample physical resources, on the other hand, can prudently shoulder great risks to avail himself of the possibilities for capital gain.

An investment portfolio must be composed in the light of the income required from it. Though high-grade bonds provide a high degree of safety, the yield from them is relatively low. On the other hand, carefully selected stocks involve a greater degree of risk but provide a larger return. In many cases, however, investors reach to speculative securities for income which they do not appear to require and in so doing assume risks that apparently ill become them. The foremost problem in investment is that of apportioning funds properly among securities of different types. Before selecting specific securities for his portfolio, the investor must determine the relative percentages of his funds which should be prudently allocated to high-quality fixed-income securities on the one hand and to lesser-quality bonds and preferred stocks, as well as to common stocks, on the other. This calls for the establishment of an investment program, definite in objective but flexible in content. Any arbitrary fixed percentage distribution between bonds and stocks would ignore both the peculiar problem of the investor and constantly changing market conditions. At one time it may be wise for the investor to restrict his holdings of bonds and of preferred stocks; at another time prudence may dictate the advisability of placing the funds primarily in good-quality bonds and other fixed-income securities. Not until the proper apportionment between bonds and stocks has been planned is it practicable to select specific individual issues.

**Selection of securities.** It is easy enough ordinarily to select speculative securities affording liberal income and possessing possibilities for eventual enhancement in value. The difficulty, however, is in reconciling these two factors with the risks which they normally entail and the individual investor's ability to shoulder such risks.

Analysis should precede the selection of the security and should involve consideration of the industry, the company, and the security. Industries go through a life cycle which may be divided roughly into experimentation, expansion, and saturation. The saturation stage is sometimes followed by a decline. While in the experimentation stage, an industry usually experiences severe competition, low earnings, failures, and the elimination of the weaker companies. Investors who buy into companies at this stage may be getting

in "on the ground floor" of a subsequently successful enterprise or may be doomed to loss of their investment in an unsuccessful venture. All industries which may enter the stage of experimentation do not necessarily survive and expand. Many of them are unable to make a market for their products and they disappear. The investor who may have been fortunate in the selection of the industry must be patient, however, for a return on his investment, since newly established companies must of necessity conserve initial earnings in an attempt to build up strong financial resources.

An industry that has passed successfully through the period of experimentation usually enters the period of expansion. The rate of expansion, however, depends largely upon the character of and the demand for the product. After enjoying a period of expansion, an industry inevitably reaches the saturation stage, at which the rate of growth decreases. With the slowing down in the rate of increase, the securities assume the characteristic of stability of earnings in contrast to the previous growth in earnings. Obviously, an industry entering the period of decline presents no attraction to the investor. On the other hand, an industry in the expansion stage merits the attention of the investor.

An attractive investment situation is rarely found in an industry that is not prosperous as a whole or that is declining. Selection of the industry should be based upon two considerations: (a) What are the probable economic conditions ahead, and (b) will the industry under consideration prosper, hold its own, or fall behind? If the investor believes that a period of industrial decline is approaching, his selection should be restricted to an industry which either produces products or services considered to be a necessity or whose raw materials and general overhead costs are flexible enough to permit maintenance of adequate profit margins in the face of declining selling prices for the products. Under those conditions, he would prefer the food industry, certain types of public utilities, or other similarly situated industries rather than heavy equipment manufacturers, railroad equipment, or the building-supply industry. If, on the other hand, he contemplates the beginning of an upward movement in the broad economic cycle, his initial selection would include railroad equipment, steel, non-ferrous metals, machinery, electrical equipment, and similar capital goods industries. Later in the cycle his selection might include railroads, automobiles, household equipment, building supplies, and retail trade.

Having selected the industry, the attention of the investor is

directed next to the selection of a company in the industry. Analysis of the companies in order to choose the most promising company involves consideration of growth prospects, management, balance sheet, earnings, and dividend record. The importance of the growth factor lies in the fact that when a company ceases to grow it rarely remains stationary; it usually declines with consequent decline in the market value of its securities and the owners' invested capital. Efficient management is essential to the successful operation of any company since upon it depends growth, ability to withstand adversity, and the realization of income to the investor. Analysis of the balance sheet reveals both the solvency and the stability of the company as evidenced by its working capital and its fixed capital. The comparative earnings statement discloses growth, the ability of the management to cope with economic conditions as they may arise and what the investor may expect in the way of future income and accrued value to his investment. Though the dividend record is historical evidence of the company's ability or inability to earn an income on its invested capital, analysis of it reveals to the investor an approximation of what return he may expect on his capital.

Analysis of the securities of the company finally selected must of necessity include careful consideration of the nature and strength of the claim against the earnings and assets which each security enjoys as evidenced by the terms of the bond indenture or the stock provisions, financial strength of the company, and the earnings record.

**Supervision.** Proper supervision of a fund involves adequate diversification, continuous review, and proper safeguarding. No matter how carefully securities may be selected, the investor nevertheless assumes risk in each investment. For this reason the funds must be diversified. They may be diversified among bonds and stocks, public and private corporate issues, securities of railroads, public utilities, industries, banks, and insurance companies. Funds invested in industrial companies may be diversified among companies in various fields and in various parts of the country. Bonds may also be diversified according to maturity dates.

Diversification seeks to increase the degree of safety in the fund by decreasing the amount of risk incurred in each security.<sup>12</sup> It

<sup>12</sup> Institutional investors are usually required by law to diversify their investments. In New York State, savings banks may not invest more than 65 per cent of total assets in real estate mortgages (exclusive of Federal Housing Administration insured mortgages); 25 per cent in railroad securities; 10 per cent in electric and gas bonds; 10 per

is a realistic recognition of the fallibility of human judgment and of the uncertainties underlying the selection of securities. Occasional losses must inevitably occur, but diversification tends to limit the full force of any single miscalculation to only part of the investment fund. Diversification of funds among several securities is not an attempt to eliminate risk but rather to spread the risk.

A portfolio may consist exclusively of the most promising securities in their own particular classifications and yet be entirely unsuited for the owner if the funds are allocated unwisely among the various types of securities. In fact, many portfolios are unsuitable for this very reason. Experience has shown that investors frequently go to one extreme or the other by either over-diversifying or under-diversifying their risks. Some investors act on the erroneous belief that the larger the number of securities the greater is the degree of diversification and safety. They overlook the practical handicap that the portfolio may contain more securities than they can properly supervise. One portfolio recently submitted had an aggregate value of \$45,264 and contained forty-three securities with an average investment of approximately \$1,050. Individual commitments ranged from \$120 to \$4,486; fifteen holdings accounted for 72.5 per cent of the entire fund, and the remaining 27.5 per cent was scattered over twenty-eight securities. In another fund of \$180,620, which contained fifty securities representing an average investment of \$3,612, corporate securities alone ranged from eight shares of one common stock with a total market value of \$94 to fifty shares of another common stock having a value of \$8,000. The investment in corporate securities amounted to \$51,227, or 62.8 per cent, and were in sixteen issues. The rest of the fund, 37.2 per cent, was spread over as many as thirty issues. Obviously those lists did not afford the risk diversification that length is commonly supposed to supply. Other investors under-diversify, not so much by investing in too few securities but by failing to allocate the funds judiciously among the individual issues and industries. Many investors are inclined to show undue preference for securities of corporations that operate in the section of the country in which

cent in telephone bonds Life insurance companies may not invest more than 40 per cent of total assets in real estate mortgages (exclusive of Federal Housing Administration insured mortgages) nor more than 10 per cent in Canadian government obligations. Fire and casualty insurance companies must comply with the requirements for life insurance companies as to eligible investments to the extent of 50 per cent of the unearned premium reserve and reserves for estimated losses. Common trusts may not invest more than 10 per cent of total assets in any single enterprises other than United States Government securities.

the investors reside. In so doing they run the risk involved in restricting their portfolio's diversification on a geographical basis. The measurement of the diversification afforded by a fund is not the number of securities owned but the proportions in which they are held. A fund containing fifty or more securities may be not nearly so well diversified as another containing no more than ten securities. The appropriate number of securities depends upon the number of eligible securities available, the size of the investment fund, and the number of issues the investor can reasonably supervise.

However well chosen the portfolio may be, it must be continually reviewed in the light of changing conditions both in the securities market and in the requirements of the investor. Cyclical change threatens the investor through periodic general decline in corporate income and asset protection, through variation in his income from the securities, and through change in the market valuation of his securities. In a balanced investment program bonds are relied upon for protection against periods when stock prices and dividends decline, while stocks are designed to provide an appreciation in price and increase in dividends during an inflationary period. It is difficult, however, to achieve perfect and permanent balance. Circumstances are continually arising to change investment values collectively and separately.

Diversification tends to minimize the losses which may be incurred because of those changes, but the sale and exchange of securities that face unpromising prospects are even more effective as a guard against depreciation. In view of changing business conditions and the corresponding changes in investment values, adjustment of the portfolio becomes mandatory. The adjustment does not involve a complete change from bonds to stocks or from stocks to bonds, but rather a shift in the emphasis given to high-quality fixed-income securities on the one hand and to lesser-quality bonds, preferred stocks, and common stocks on the other. Inasmuch as the primary reason for the assumption of risk is to obtain income, adjustment of the portfolio to changes in the purchasing power of the dollar is essential. Contrary to an altogether too common concept, improvement of an investment portfolio does not consist solely of adding to the securities contained in it. Quite frequently improvement can be effected not by changing the securities but simply by allocating funds differently among the various bonds and stocks. In other cases it is necessary to weed out many issues. The switching

of securities, like diversification, may be overdone and carried to the point where it becomes a trading account. A switching of securities is justified only when it results in improvement in the fund.

The securities in the fund should also be properly safeguarded, not only as to place but as to condition as well. The advantage of depositing them in a protected place, such as a safe-deposit box in a bank, is obvious. Stocks should be transferred to the name of the owner upon purchase; bonds bought for long-term holding should be registered in full or at least as to principal.

### Review Questions

1. Name the factors involved in the selection of securities.
2. Distinguish between relative and absolute safety.
3. Discuss the relation of safety of principal and safety of income.
4. Indicate the relation between the rate of return and the degree of risk.
5. Discuss the significance of interest rates.
6. Distinguish between the commercial rate of interest and the investment rate of return.
7. Name the elements entering into the rate of return on any security.
8. Explain the calculation of the pure rate of interest.
9. Discuss the limitations to yield as a criterion of investment value.
10. Explain the significance of marketability.
11. How may the degree of marketability in a security be measured?
12. Discuss the factors influencing the degree of marketability in a security.
13. What is meant by the statement, "Marketability costs money"?
14. Discuss the kinds of taxes that are important to investors in securities.
15. Distinguish between the federal normal tax and the surtax.
16. Distinguish between short-term and long-term capital gains.
17. What is meant by tax-exempt securities?
18. Discuss the investment problem of tax-exempt securities.
19. Explain the significance of estate taxes.
20. Discuss the problem of investment timing.
21. Indicate the relative position of bond prices and stock prices in the respective stages of the business cycle.
22. Discuss the relation between bond prices and interest rates.
23. Explain the movement of commercial and of investment interest rates.
24. Would the purchase of relatively short-term bonds be advisable when interest rates are relatively low? Why?
25. Name two general classes of investors.
26. Name three factors in the formulation of an investment program.
27. What is meant by "institutional" investors?
28. Indicate the restrictions on their investment policies.
29. Define a trust fund.

30. Name the parties to a trust.
31. Describe two kinds of beneficiaries.
32. Distinguish between a voluntary and a testamentary trust.
33. Discuss the relative advantages of a personal and a corporate trustee.
34. Discuss the investment policy of a trustee under a testamentary trust.
35. Discuss the investment policy of a trustee under a testamentary trust in the absence of documentary instructions
36. Under what conditions does a trustee have discretionary powers?
37. To what extent is the trustee liable?
38. Indicate the conflicting interests with which the trustee may have to contend.
39. What is the general basic objective of the trustee?
40. Explain the operation of the life insurance trust.
41. Describe the nature of a common trust.
42. Indicate the fundamental objective of a savings bank.
43. Indicate the legal limit to the size of the individual deposit.
44. Discuss the relation between the type of deposit accepted by a savings bank and its investment policy.
45. Describe the legal limitations on savings bank investments.
46. Discuss the experience of New York State in establishing a "legal list."
47. Explain the significance of the legal list to the investing banks.
48. Indicate the types of deposits accepted by commercial banks.
49. Discuss the relation between the types of deposits and the investment policy of a commercial bank.
50. What is the meaning of "marketable" as applied to commercial bank bond investment?
51. Discuss the relation between the liabilities of life insurance companies and their investment policy.
52. What is the assumed rate of return on life insurance company investments?
53. Indicate the legal limitations on life insurance company investments
54. Name four respects in which fire and casualty insurance companies differ from life insurance companies.
55. Indicate the legal limitations on fire and casualty insurance company investments.
56. Contrast the individual investor and the institutional investor from the viewpoint of legal limitations on their respective investments.
57. What is meant by the "average" investor?
58. Explain the factors involved in the determination of an investor's investment objective.
59. Discuss the relation of income and risk
60. Discuss the problem of apportioning funds properly among securities of different types.
61. Indicate the relation of analysis and selection of a security.
62. Indicate the three phases of analysis.
63. What is meant by the life cycle of industries?
64. Discuss the factors involved in the analysis of the companies in an industry.

65. Discuss the factors involved in the analysis of a security.
66. Name three factors involved in the supervision of a fund.
67. Discuss the purpose of diversification.
68. Indicate the common errors in diversification.
69. Name three factors affecting proper diversification.
70. Discuss the function of bonds and stocks in diversification.
71. Discuss the significance of a continuous review of the fund.
72. Under what condition is an exchange of securities justified?
73. Discuss the significance of safeguarding the fund.
74. Indicate the means of properly safeguarding the fund.

### Assignment

- (a) Indicate the maximum yield on a true investment when the cost of capital is (1)  $2\frac{1}{2}$  per cent, (2)  $2\frac{3}{4}$  per cent, (3) 3 per cent.
- (b) Indicate the range of yields for highest-grade, high-grade, good, fair, and speculative securities when the yield on United States Treasury long-term bonds is (1)  $2\frac{3}{4}$  per cent and (2)  $3\frac{1}{2}$  per cent.
- (c) Calculate the price of a 4 per cent bond due in fifteen years in (1) a 4 per cent market, (2) a  $3\frac{1}{2}$  per cent market, and (3) a 5 per cent market.
- (d) Compute the current yield on a stock (\$50 par value) paying an annual dividend of 6 per cent and selling at  $80\frac{3}{8}$  to (1) a stockholder who still owns the stock which he purchased two years ago at  $90\frac{7}{8}$  and (2) a trader who buys the stock at its present price.
- (e) Stockholder Wilson bought 100 shares of XYZ Corporation common stock in 1944 at  $52\frac{1}{2}$ . Stockholder Thomas bought 100 shares of the same common stock in 1945 at  $43\frac{3}{4}$ . The corporation paid an annual dividend of \$2 a share in 1944 and of \$1 50 a share in 1945. Compute the current yield to stockholder Wilson in 1944 and in 1945 and to stockholder Thomas in 1945.
- (f) Set up an investment program for a man 35 years of age.
- (g) Set up an investment program for a man 26 years of age, married, one child, \$200 in a savings account, no life insurance, and earning \$3,000 a year.
- (h) Analyze the following portfolio submitted by a business man, age sixty, with only his wife to support, whose present business yields him \$5,000 annually, whose annual living expenses are \$7,000, and who has \$10,000 in cash in the bank and \$30,000 in paid-up life insurance:

### BONDS

<i>Amount</i>	<i>Issue</i>	<i>Cost</i>	<i>Current Market Value</i>	<i>Annual Income</i>
\$5,000	A T & S F. 4's, 1995 . . . . .	\$5,600	\$6,181.25	\$200
2,500	Canadian Pacific 5's, 1954 . . . . .	2,600	2,596 88	125
5,000	Southern Pacific $4\frac{1}{2}$ 's, 1968 . . . . .	3,350	4,250 00	225
		<u>\$11,550</u>	<u>\$13,028.13</u>	<u>\$550</u>

### COMMON STOCKS

<i>Shares</i>	<i>Issue</i>			
100	American Telephone & Telegraph . . . . .	15,400	16,112.50	900
50	U. S. Steel . . . . .	2,500	2,625 00	200
100	General Electric . . . . .	3,600	3,612.50	140
100	Consolidated Edison . . . . .	2,000	2,175.00	160
		<u>\$23,500</u>	<u>\$24,525.00</u>	<u>\$1,400</u>
		<u>\$35,050</u>	<u>\$37,553.13</u>	<u>\$1,950</u>



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## CHAPTER NINE

# UNITED STATES GOVERNMENT OBLIGATIONS

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**Federal government debt.** The federal government has issued obligations to meet budgetary deficits arising out of inadequacy of tax revenues and to finance personal relief, public works, national defense, agricultural benefits, and corporate loans. During the period 1920-1930 the federal budget reported an annual surplus of receipts over expenditures. During the same period the public debt was gradually reduced from \$25,482,034,000 in 1919 to \$16,185,308,000 in 1930. On the other hand, the period beginning

FEDERAL DEBT \*  
(000,000)

	<i>Surplus</i>	<i>Gross Debt</i>		<i>Deficit</i>	<i>Gross Debt</i>
1920 . . .	\$212	\$24,298	1931 . . .	\$ 902	\$16,801
1921 . . .	87	23,976	1932 . . .	2,942	19,487
1922 . . .	314	22,964	1933 . . .	2,245	22,539
1923 . . .	310	22,350	1934 . . .	3,255	27,053
1924 . . .	505	21,251	1935 . . .	3,783	28,701
1925 . . .	251	20,516	1936 . . .	4,953	33,545
1926 . . .	378	19,643	1937 . . .	3,253	36,427
1927 . . .	636	18,510	1938 . . .	1,450	37,167
1928 . . .	399	17,604	1939 . . .	3,600	40,445
1929 . . .	185	16,931	1940 . . .	3,740	42,971
1930 . . .	184	16,185	1941 . . .	5,168	48,961
			1942 . . .	19,598	72,422
			1943 . . .	55,897	136,696
			1944 . . .	49,595	201,003
			1945 . . .	53,948	258,682

\* As of June 30.

1931 witnessed an increase in the annual deficit of receipts over expenditures from \$902,000,000 in 1931 to a peak of \$55,901,000,000 in 1943 and, at the same time, a substantial increase in the public debt from \$16,801,000,000 in 1931 to \$258,682,000,000 in 1945. The rapid rise in the debt made it necessary to increase the legal debt limit by successive acts of Congress to the present limit of \$300,000,000,000.<sup>1</sup>

<sup>1</sup> The debt limit of \$45,000,000,000 set in 1938 was raised to \$65,000,000,000 in 1941, to \$125,000,000,000 in 1942, to \$210,000,000,000 in 1943, to \$260,000,000,000 in 1944, and to \$300,000,000,000 in 1945.

*Gross debt.* The total gross debt includes interest-bearing debt and non-interest-bearing debt. The interest-bearing debt consists of marketable issues such as Treasury bonds, Treasury notes, Treasury bills, Treasury certificates of indebtedness, Postal Savings bonds, conversion bonds, and Panama Canal bonds, and of non-marketable issues such as United States Savings bonds, Treasury Tax and Savings notes, Adjusted Service bonds, and depositary bonds. The non-interest-bearing debt is composed principally of obligations in the form of currency. The direct interest-bearing obligations issued by the Treasury rose from \$969,759,000 in 1915 to a peak of \$25,234,496,000 in 1919 at the end of the First World War. During the decade 1920-1930 the total decreased to \$15,921,-892,000. Beginning in 1931, however, it increased to \$256,356,-000,000 in June, 1945.

## FEDERAL DEBT \*

(000,000)

	1943	1944	1945
Interest-bearing debt:			
Treasury bonds . . . . .	\$ 57,520	\$ 79,244	\$106,448
Treasury notes . . . . .	9,168	17,405	23,497
Treasury bills . . . . .	11,864	14,734	17,041
Treasury certificates of indebtedness . . . . .	16,561	28,822	34,136
Postal Savings bonds . . . . .	117	117	117
Conversion bonds . . . . .	29	29	29
Panama Canal bonds . . . . .	50	50	50
Total marketable issues . . . . .	95,309	140,401	181,318
U: S. Savings bonds . . . . .	21,256	34,606	45,586
Treasury Tax and Savings notes . . . . .	7,495	9,557	10,136
Adjusted service and depositary bonds . . . . .	449	692	504
Total nonmarketable issues . . . . .	29,200	44,855	56,226
Special issues . . . . .	10,871	14,287	18,812
Total . . . . .	135,380	199,543	256,356
Non-interest-bearing debt: . . . . .	1,316	1,460	2,326
Total debt . . . . .	\$136,696	\$201,003	\$258,682

\* As of June 30

**Bonds.** Treasury obligations consist of Treasury bonds, notes, bills, certificates of indebtedness, savings bonds, postal savings bonds, and prewar bonds. Treasury bonds account for approximately 60 per cent of the total marketable securities and about 40 per cent of the total interest-bearing debt. They represent long-term obligations and have maturities of five years and above. The coupon rate ranges from  $4\frac{1}{4}$  per cent on the 1947-1952's to  $1\frac{3}{4}$  per cent on the 1948's. The variation in coupon rate reflects the Treasury practice of selecting a rate at the time of issue which

in accordance with the maturity permits offering the bonds at par. The  $4\frac{1}{4}$ 's of 1947-1952, for example, were offered at par in 1922, whereas the  $1\frac{3}{4}$ 's of 1948 were offered at par in 1942.

Most of the issues have an optional maturity date. For example, the  $2\frac{3}{4}$ 's of December 15, 1960-1965, mature in 1965 but are callable in 1960. Treasury bonds, with few exceptions, are callable as a whole or in part at par and accrued interest on any interest date on four months notice after the call date. The only issues which are non-callable are  $2\frac{1}{2}$ 's due September 15, 1948; 2's due December 15, 1947; and  $1\frac{3}{4}$ 's due June 15, 1948. Though Treasury bonds are listed on the exchanges, it is estimated that 90-95 per cent of the trading in them occurs in the over-the-counter market through dealer houses that act as specialists in United States Government issues and through dealer banks. Most of the trading is for institutional accounts and ranges in extent from \$100,000 to several millions.

**Notes.** Treasury notes, which mature in one to five years, represent medium-term obligations. Unlike Treasury bonds, the notes sold to the public are not redeemable before maturity. The coupon rate ranges from  $\frac{3}{4}$  of 1 per cent on the December 15, 1945's issued in December, 1940, to  $1\frac{1}{2}$  per cent on the September 15, 1947's issued in July, 1943. They are traded exclusively over the counter. The principal buyers are commercial banks, wealthy individuals, and other investors seeking short-term maturities. As in the case of Treasury bonds, the market is maintained by dealer specialists and dealer banks. The greater part of the trading is in multiples of \$1,000,000.

**Bills and certificates.** Treasury bills and certificates of indebtedness are short-term obligations which mature in less than one year. They differ, however, in that Treasury bills are issued on a discount basis while Treasury certificates are issued on an "and interest" basis. Treasury bills are bearer obligations which promise to pay a specified amount, without interest, on a specified date. They are issued on a discount basis in denominations of \$1,000, \$5,000, \$10,000, \$100,000, \$500,000, and \$1,000,000 maturity values.<sup>2</sup> They are offered by public notice for competitive bidding, the Treasury inviting tenders through the Federal Reserve banks. The offering of these bills at a discount assures the Treasury of the best terms warranted by the condition of the money market at the time

<sup>2</sup> The Secretary of the Treasury may issue the bills on an interest-bearing basis, on a discount basis, or on a combination interest-bearing and discount basis.

of sale. Treasury certificates, on the other hand, carry a stipulated rate of interest and are offered at par and accrued interest. Currently they carry a coupon rate of  $\frac{7}{8}$  of 1 per cent.

The Treasury regularly issued certificates 1917-1929 to cover its temporary financial needs. Treasury bills did not become a regular instrument of Treasury financing until the Second Liberty Loan Act was amended on June 17, 1929. Both Treasury bills and certificates are traded only over the counter. Treasury bills are bought chiefly by commercial banks for secondary reserve purposes, by corporations for working capital purposes, and, in some states, where bank deposits are subject to taxation, by depositors carrying large balances who buy the bills in contemplation of the tax periods. Those bills provide for investors extremely liquid securities with a wide choice of maturity dates. The greater part of the trading is usually in blocks of \$500,000 and upward.

**Savings bonds.** United States Savings bonds were first issued on March 1, 1935, and have been issued in sequential series A-G. Series A, B, C, and D were issued through the postal service and Federal Reserve banks; Series E are issued through the postal service, Federal Reserve banks, trust companies, savings and loan associations, and other organizations. Series E, F, and G may be purchased also directly from the Treasurer of the United States.<sup>3</sup> They differ from other Treasury obligations in that they are non-transferable. Formerly they were redeemable only through the Treasury Department or Federal Reserve banks. Effective October 2, 1944, however, qualified commercial banks were authorized to cash savings bonds of Series A to E. The banks are held responsible for payment to the proper owners and pay the prevailing redemption value as printed on the bond. While there is no charge to the public for the redemption, the banks receive from the Reserve banks a quarterly reimbursement for their services.

Series E bonds are issued at a discount in denominations of \$25, \$50, \$100, \$500, and \$1,000 maturity value and mature in ten years. They may be bought by one individual, by two individuals as co-owners, or by one individual with another individual as beneficiary. At maturity the holder will receive the face value of the bond, which includes the original issue price and accumulated

<sup>3</sup> Series E, F, and G, designated War Savings bonds, include bonds issued as Defense Savings bonds. Since the terms and the conditions of issue are identical, no distinction is made between any bonds of Series E, F, and G whether issued as Defense or as War Savings bonds.

interest and a yield of 2.9 per cent. The bondholder is limited to the purchase of \$5,000 maturity value in any one calendar year. The bond may be redeemed at any time after 60 days from the issue date of the bond at values stipulated on the bond.

Series F bonds are issued at a discount in denominations of \$100, \$500, \$1,000, \$5,000, and \$10,000 maturity value. They differ from the Series E, however, in that they mature in twelve years and may also be purchased by non-banking corporations, partnerships, associations, and trustees. Commercial banks, however, may hold Series F or Series F and G combined up to \$100,000 issue cost, provided that those holdings in combination with holdings of certain other securities subscribed to in the Fourth or Fifth War Loan Drives do not exceed 10 per cent of time deposits before June 12, 1944, or 20 per cent of time deposits on or after that date. At maturity the holder will receive the face value of the bond, which includes the original issue price and accumulated interest and a yield of 2.53 per cent. The holder is limited to the purchase of \$100,000 (cost price) of Series F bonds, or of Series F and G combined, in any one calendar year. He may redeem Series F bonds after six months from issue date of the bond upon one month's written notice and at the values stated on the bond.

Series G bonds are issued at par in denominations of \$100, \$500, \$1,000, \$5,000, and \$10,000. They are similar to the Series F bonds in maturity date (twelve years) and in the types of eligible purchasers. Interest is paid semi-annually at the rate of 2.5 per cent a year. The bondholder is limited to \$100,000 (cost price) of Series G bonds, or Series G and F combined, in any one calendar year. The bond is redeemable at par if held by the owner for twelve years from issue date, but it may be redeemed six months from issue date on one month's written notice. If redeemed prior to maturity, however, the redemption value is in accordance with the schedule stated on the bond.

The predetermined cash value which the Treasury agrees to pay and the fact that the bonds are non-transferable relieves the holder of all risk of market decline. On the other hand, the redemption prices are so arranged as to provide yields at substantially lower rates than are obtainable if the bonds are held to maturity, as evidenced by the following yields:

Redeemed at	<i>Series E</i>	<i>Series F</i>	<i>Series G</i>
end of 5 years . . . . .	1.72%	1.34%	1.35%
at maturity . . . . .	2.9	2.53	2.50

**Savings notes.** United States Treasury Savings notes, Series C, are also non-marketable obligations. They are issued in denominations of \$100, \$500, \$1,000, \$10,000, \$100,000, \$500,000, and \$1,000,000. They may be purchased by an individual, corporation, fiduciary, unincorporated association, or society, by a town, county, city, state, or other governmental body, or in the name of a partnership. The interest return takes the form of an excess of redemption value over purchase price. They mature three years from the date of issue but are redeemable at the option of the holder at any time during and after the sixth calendar month after the month of purchase. Payment at maturity or on redemption before maturity will be made at par and accrued interest to owners other than commercial banks accepting demand deposits, but at the issue price to commercial banks. During and after the second calendar month following the month of purchase they are acceptable at par and accrued interest in payment of any federal income, estate, or gift taxes assessed against the individual, corporation, or other taxpaying entity in whose name they are inscribed or against the owner's estate. These notes are available in unlimited amounts, afford liquidity and income return, and avoid market risk.

**Miscellaneous obligations.** The balance of the Treasury obligations outstanding consist of the Panama 3's due 1961; Conversion 3's due 1946-1947; Postal Savings 2½'s; Depositary 2's; Adjusted Service 3's due 1945 and 4½'s due 1946. The Panama 3's were issued in 1911 to pay in part for the construction of the Panama Canal. The Conversions 3's, due 1946-1947, were issued 1916-1917 to refund the Consols of 1930 and the Panama Loan Series of 1906 and 1908. The Panama 3's and the Conversion 3's are non-callable. They are listed on the New York Stock Exchange, but most of the trading is over-the-counter. The Postal Savings 2½'s were issued 1925-1935 under the Postal Savings System and are due twenty years from date of issue. The Board of Trustees of the Postal Savings System will purchase postal savings bonds at par and accrued interest at any time after their issue.<sup>4</sup> The bonds are callable at par one year from date of issue.

The Depositary 2's, first series, may be subscribed for, at par, by depositaries and financial agents, and the second series by depositaries for withheld taxes. The first series were issued beginning 1941 and mature twelve years from each issue date. They are

<sup>4</sup> Except from June 1 to 30 and December 1 to 30 of each year, when the books are closed.

issued in registered form in the name of the Treasurer of the United States in trust for the depositaries and financial agents to which they are allotted. The bonds are non-transferable but are redeemable at any time upon not less than 30 nor more than 60 days' notice in writing, as a whole or in part, at par, at the option of the United States or of the holder. They are acceptable to secure deposits of federal funds with, and the faithful performance of duties by, the depositaries and financial agents who may buy the bonds in an amount for which they are qualified. The second series were issued beginning 1943 and also mature twelve years from the issue date. They are issued in registered form in the name of the Federal Reserve Bank as fiscal agent of the United States in trust for the depositary. The bonds are held by the Federal Reserve Bank either in safekeeping or as collateral security for deposits. They are sold to depositaries for withheld taxes and in amounts varying according to the monthly average of tax remittances made to the Treasury. The depositary may purchase bonds with its own funds or the Treasury may agree to place with the depositary a balance to the credit of the Treasurer of the United States provided such balance is used by the depositary to purchase an equal amount of bonds. The depositary may purchase with its own funds twice the amount of bonds that it may purchase if it elects to take a Treasury balance. The bonds are redeemable at the option of the United States or the holder, in whole or in part, at par and accrued interest at any time on not less than 30 days' notice.

The Adjusted Service 3's, due 1945, were issued in 1936 to veterans of the First World War in payment of amounts due on Adjusted Service Certificates, whereas the 4½'s, issued in 1936 and due on and after June 15, 1946, are held by the United States Government Life Insurance Fund. The 3's of 1945 were redeemable at the option and request of the veteran in whose name they were registered at any time before maturity.

**Instrumentalities.** The indirect debt of the federal government consists of instrumentalities issued by the Territory of Hawaii and the insular governments of Puerto Rico and the Philippines and by agencies established by the United States whose obligations are not guaranteed by the federal government. Territorial and insular bonds are direct and unqualified obligations of the respective territorial and insular governments and are payable from the proceeds of ad valorem taxes. The organic acts under which those governments function limit the indebtedness and require the maintenance of

sinking funds. For example, Congress has limited the total bonded indebtedness of the Territory of Hawaii to 10 per cent of the assessed value of property in the Territory, and the amount of indebtedness to be incurred in any one year to 1 per cent of such assessed value.

**Territorial bonds.** Territorial bonds are regarded as indirect obligations of the federal government. Inasmuch as Congress has jurisdiction over the territories, the federal government is at least indirectly responsible for loans incurred by the territories.<sup>5</sup> This position was stated by the United States Attorney-General in 1921 when approving the issuance of the Philippine 5½'s of 1941:

This issue and sale of bonds is authorized explicitly by the National Power, and while in the strict and legal sense the faith of the United States of America is not pledged as a guaranty for the payment of the loan or for the due use of the proceeds or the observance of the sinking fund requirements, the entire transaction is to be negotiated under the auspices of the United States of America and by its recognition and aid. There can be no doubt, therefore, that the National Power will take the necessary steps in all contingencies to protect the purchasers in good faith of the securities.

While this opinion is considered applicable to all Territorial issues, its application to the Philippines was modified by the Tydings-McDuffie Bill of March 24, 1934, which provided specifically that there was no obligation on the part of the United States to meet the interest or principal of bonds or other obligations of the Philippine commonwealth and provincial or municipal governments issued thereafter during the continuance of United States sovereignty in the Philippines.

**Agency bonds.** Bonds issued by agencies such as the Federal Farm Loan banks, the Federal Home Loan banks, Federal Intermediate Credit banks, and the Federal National Mortgage Association are termed "instrumentalities." The holders of these issues, however, must look solely to the issuing institution for the safety of the bonds.

*Farm Loan banks.* The Farm Loan banks were created under the Farm Loan Act of 1916 for the purpose of supplying long-term credit to farm owners. Two types of lending institutions were authorized: Federal Land banks and Joint Stock Land banks. In each case an eligible loan must represent (a) a first mortgage, (b) on unencumbered farm property, (c) in an amount not exceeding 50 per cent of the value of the land and 20 per cent of the value of the improvements thereon and (d) repayable in installments over a

<sup>5</sup> United States Constitution, Article IV, Section 3.



period of between five and forty years. Although the Federal Land bank bonds were issued by the individual banks, they were joint obligations of the twelve banks constituting the system. On the other hand, bonds issued by a Joint Stock Land bank were the obligations of the issuing bank. Under the provisions of the Farm Relief Act, 1933, Joint Stock Land banks are prohibited from making any new loans to farmers except in connection with old loans then outstanding. Since then the banks have been gradually liquidating their loans and redeeming their bonds. All the bonds issued by the individual Federal Land banks have been called for redemption and replaced by consolidated bonds for which the twelve banks are jointly and severally liable.

*Federal Home Loan banks.* Federal Home Loan banks were established under the Home Loan Act of 1932 for the purpose of giving greater liquidity to first mortgages on residential properties held by lending institutions, life insurance companies, and savings and loan associations. Such institutions become members of the system by purchasing stock in one of the twelve regional Federal Home Loan banks and, as stockholders, may borrow on mortgage collateral which is eligible under the Act. To be eligible, loans must be (a) first mortgages, (b) due within fifteen years, (c) on residential property having a value of \$20,000 or less, and (d) not in excess of 60 per cent of the unpaid balance on the mortgage or 40 per cent of the value of the property. The banks may issue bonds to investors secured by mortgages offered as collateral by borrowing members aggregating 190 per cent (in unpaid principal) of the bank bonds. Although the Home Loan bonds may be issued by separate banks, in which instance the other banks are jointly liable, the present practice is to issue consolidated bonds as the joint liability of all twelve banks.

*Federal Intermediate Credit banks.* The Federal Intermediate Credit banks were authorized by the Agricultural Credits Act of 1923 for the purpose of discounting paper for, and of making loans to, financing institutions and coöperative associations in need of funds for the seasonal production and marketing needs of farmers and stockmen. The entire capital stock of the twelve banks is held by the Treasury. The debenture bonds issued by the banks mature in from three to twelve months and are secured by at least a like face value of cash, government securities, discounted notes, and other approved paper. They are the direct joint and several obligations of the twelve banks.

*Federal National Mortgage Association.* The Federal National Mortgage Association was incorporated in 1938 for the purpose of buying, selling, and servicing mortgages insured under the National Housing Act and of making limited direct real estate loans insured under the Act. It is controlled and operated by the Reconstruction Finance Corporation but is supervised by the Federal Housing Administration. The notes issued by the association are secured by at least an equal amount of its holdings of Federal Housing Administration insured mortgages, cash, or direct or guaranteed obligations of the United States, and are general obligations of the association.

**Investment tests.** Since the federal Treasury obligation is a debenture, the holder is an unsecured creditor with only a general claim against the income of the government. The two tests, therefore, are the ability to pay and the willingness to pay.

*Ability to pay.* The ability of the government to meet its obligations rests upon its taxing power and the productiveness of the taxes. The chief source of revenue is the tax on incomes as evidenced by the following statement of receipts in the federal budget as of June 30<sup>6</sup> (000,000):

	1940	1941	1942	1943	1944	1945
Income . . . . .	\$2,125	\$3,470	\$7,960	\$16,094	\$34,655	\$35,173
Excise . . . . .	2,345	2,967	3,847	4,553	5,291	6,949
Social Security . . . . .	838	932	1,194	1,508	1,751	1,793
Others . . . . .	617	900	666	1,230	3,711	3,825
Total . . . . .	\$5,925	\$8,269	\$13,668	\$23,385	\$45,408	\$47,740
Net* . . . . .	\$5,387	\$7,607	\$12,799	\$22,282	\$44,149	\$46,457

\* Total receipts less social security employment taxes, which are appropriated directly to the federal old-age and survivors insurance trust fund.

The revenue from the income tax has become an increasingly important source of income both in amount and relative to total receipts. Income tax receipts more than doubled in 1943 and in 1944 and increased from 39.4 per cent of total net receipts in 1940 to 75.7 per cent in 1945.

	<i>Income Tax Receipts (000,000)</i>	<i>Total Net Receipts (000,000)</i>	<i>Percentage of Total</i>
1940 . . . . .	\$2,125	\$5,387	39.4
1941 . . . . .	3,470	7,607	45.6
1942 . . . . .	7,960	12,799	62.2
1943 . . . . .	16,094	22,282	72.2
1944 . . . . .	34,655	44,149	78.5
1945 . . . . .	35,173	46,457	75.7

<sup>6</sup> Federal Reserve Bulletin.

The ability of the government to borrow at a low rate has been indicated by the fact that the computed annual rate of interest decreased from 2.589 per cent in 1938 to 1.929 per cent in 1944 and 1.936 per cent in 1945. The annual interest on the public debt, however, has represented an increasing burden rising from 14.0 per cent of regular expenditures in 1940 to 38.9 per cent in 1944.

	<i>Interest</i> (000,000)	<i>Percentage of Total</i> <i>Expenditures*</i>
1940 . . . . .	\$1,041	14 0 %
1941 . . . . .	1,111	17.1
1942 . . . . .	1,260	19 4
1943 . . . . .	1,808	29 7
1944 . . . . .	2,609	38 9
1945 . . . . .	3,617	34 8

\* Exclusive of war activities

The ability of the federal government to meet its obligations depends upon the national income of the country. An estimate of national income is an attempt to measure the value of the net output of commodities and services by private and public enterprises. The net output is determined by deducting from the gross value of goods and services the value of materials and supplies and of plant and equipment consumed in the process. According to the United States Department of Commerce, the national income rose from \$77,800,000,000 in 1940 to \$160,700,000,000 in 1944. The rise in

	<i>National Income</i> (000,000)	<i>Interest</i> (000,000)	<i>Interest/National</i> <i>Income</i>
1940 . . . . .	\$77,800	\$1,041	1.3 %
1941 . . . . .	96,900	1,111	1.1
1942 . . . . .	122,200	1,260	1.0
1943 . . . . .	149,400	1,808	1.2
1944 . . . . .	160,700	2,609	1.6

the national income has kept pace with the increase in the annual interest on the public debt. The latter has averaged approximately 1 per cent of the national income. It should be observed, however, that in the absence of any substantial reduction in the debt, the annual interest on the debt is permanent whereas the annual national income is subject to change. A decline in the national income would make the annual interest a greater burden.

*Willingness to pay.* The willingness of the federal government to pay its obligations is entirely discretionary with the Government. As President Roosevelt said in his message of June 27, 1935:

There is no constitutional or inherent right to sue the government; on the contrary, the immunity of the sovereign from suit is a principle of universal acceptance, and permission to bring such suits is an act of grace, which, with us, may be granted or withheld by the Congress.

Since the federal government is a sovereign power which can be sued only with its consent, the best test of good faith must be found in the record of past transactions. A review of history reveals the repudiation by the government of continental currency after the Revolutionary War, the suspension of specie redemption of the greenback currency after the Civil War, and the refusal to convert gold certificate currency after the First World War. The last decade witnessed subsequent abrogations of government bond clauses.

Prior to June 5, 1933, principal and interest of all outstanding interest-bearing obligations of the United States were payable in gold coin of the standard weight and fineness fixed by the Gold Standard Act of March 14, 1900, which was 25.8 grains of gold nine-tenths fine, or 23.22 grains of pure gold. The gold clause, however, was cancelled by the Joint Resolution of June 5, 1933.<sup>7</sup> The gold content of the dollar was reduced later to  $15\frac{5}{16}$  grains of gold nine-tenths fine under authority of the Gold Reserve Act of 1934.

The United States Supreme Court on February 18, 1935, upheld the validity of the repeal of the gold clause in private contracts on the grounds that (a) the gold clause was not a contract for payment in gold coin as a commodity, or in bullion, but a contract for the payment of money, and (b) the gold clause interfered with the constitutional power of Congress to regulate currency. At the same time, in another case dealing with the liability of the federal government to redeem gold certificates in lawful currency equivalent in value to the market value of the gold coin represented by the gold certificates, the Court held that gold certificates, being currency and constituting legal tender, could not be regarded as warehouse receipts for gold. The Court also held that if the note holder had been paid in gold, he would have been required to surrender the gold to the Treasury, since gold had been nationalized by the Secretary of the Treasury under authority of the Emergency Banking Act of March 9, 1933. In any event, said the Court, he would not have been able to realize legally more than dollar for dollar in lawful currency for his gold certificate. In another case, involving the gold clause repeal as applied to United States Government bonds, the Court admitted that Congress had exceeded its constitutional authority but, following the reasoning in the gold certificate case, it held that the bondholder had failed to show

<sup>7</sup> This resolution also invalidated the gold clause in non-government obligations.

actual damages and therefore was not entitled to receive an amount in legal tender currency in excess of the face amount of the bond.

In order to circumvent any suits arising from changes in the purchasing power of the dollar, Congress adopted a joint resolution on August 27, 1935, which set January 1, 1936, as the final date for commencing suits against the government with respect to losses that might have been caused by failure of the government to fulfill the provisions of gold-clauses in obligations or currency of the United States. The United States Supreme Court ruled on March 1, 1937, that a contract with a "gold bullion clause" could be satisfied by payment of currency in the amount of the face value of the contract under the Joint Resolution of June 5, 1933.

**Tax position.** The income from federal government obligations is subject to varying degrees of exemption from income taxes. The income on all federal government obligations is exempt from state income taxes. The United States Supreme Court has held that the states have no power, by taxation or otherwise, to retard, impede, burden, or in any manner control the operations of the constitutional laws enacted by Congress to carry into execution the powers vested in the federal government.<sup>8</sup> In subsequent opinions the Court held that a state cannot, in the exercise of the power of taxation, tax the obligations of the federal government, because such taxation would be contrary to the principle of *McCulloch v. Maryland*. The income from obligations of the federal government and the territories, therefore, is exempt from taxation by states or municipalities.

Federal obligations issued prior to March 1, 1941, still enjoy certain federal income tax exemptions. Treasury bonds and notes, Conversion bonds, Postal Savings bonds, Panama Canal bonds, and Territorial bonds are exempt from the federal normal tax and the surtax. In the instance of Treasury bonds, the surtax exemption applies only up to \$5,000 principal; above \$5,000 is subject to the surtax. Federal Land bank bonds are exempt from federal income taxes; Home Loan bank bonds are exempt from the federal normal tax but are subject to the surtax. Treasury bills do not have any tax-exempt features. All federal obligations issued beginning March 1, 1941, however, are fully taxable. The Act of February 19, 1941, provided:

... interest upon ... obligations issued on or after ... (March 1, 1941) ... by the United States or any agency or instrumentality thereof shall not have any

<sup>8</sup> *McCulloch v. Maryland*, Wheaton, 316 (1819).

exemption as such . . . under Federal tax acts now or hereafter enacted. . . . For the purposes of this subsection a territory, a possession of the United States, and the District of Columbia, and any political subdivision thereof, and any agency or instrumentality of any one or more of the foregoing shall not be considered as any agency or instrumentality of the United States.

Obviously bonds which still retain tax-exempt features sell at higher prices than the taxable bonds. For example, Treasury 2's of December 15, 1948-1950, were selling to yield 1.18 per cent when the 2's of March 15, 1948-1950, were selling to yield 1.6 per cent. The lower yield for the December 15 issue was due to the fact that it was partially tax-exempt, whereas the March 15 issue was fully taxable. In 1941 and early 1942 the prices of partially tax-exempt obligations declined owing to the outbreak of war and the uncertain future tax status of the issues. The uncertainty was caused by the removal of tax-exemption from future issues of Treasury securities and by Treasury advocacy of federal tax levies against the income from future issues of state and municipal obligations. The prices of those partially tax-exempt securities returned to their previous levels, however, upon assurance of retention of their tax-exempt status. During late 1942 and early 1943, the prices of those issues again declined as a result of activity by life insurance companies and other non-taxpaying institutions. Those institutional investors replaced their partially tax-exempt obligations with taxable securities producing a high yield. The completion of those portfolio adjustments witnessed a sharp rise in the prices of the partially tax-exempt issues. On the other hand, prices of taxable issues maintained a fairly steady level following the decline at the opening of the war. That stability was due largely to the governmental policy of establishing and maintaining a fixed pattern of interest rates for wartime financing.

Federal obligations are not exempt from federal or state inheritance taxes, nor are state or territorial obligations exempt from the federal estate tax. The estate or inheritance tax is not considered a tax upon property but rather upon the right to dispose of property.<sup>9</sup> The tax is imposed by the government for protection accorded during the life of the decedent and is an obligation which cannot be evaded or defeated by the particular form in which the property of the decedent was invested.

**Accrued interest.** The accrued interest on a United States Treasury bond is calculated on the basis of the exact number of days

<sup>9</sup> *Plummer v. Coler*, 178 U. S. 115 (1900).

falling within the interest period. For example, in the instance of a 2 per cent bond, the interest on which is payable June 15 and December 15, there are 183 days in the interest period June 15 to December 15 and 182 days in the interest period December 15 to June 15, computed as follows:

<i>June 15–December 15</i>		<i>December 15–June 15</i>	
June . . . . .	16 days	December . . . . .	17
July . . . . .	31	January . . . . .	31
August . . . . .	31	February* . . . . .	28
September . . . . .	30	March . . . . .	31
October . . . . .	31	April . . . . .	30
November . . . . .	30	May . . . . .	31
December . . . . .	14	June . . . . .	14
	183 days		182 days

\* February has 29 days in a leap year

If, in a bond transaction, the interest accrues through December 5, it has accrued for a period of 174 days.<sup>10</sup> Since the interest payment for the interest period June 15–December 15 is \$10, the accrued interest represents  $\frac{174}{183}$  of \$10, or \$9.508197.

**Features.** The federal government bond market has become the most important part of the investment market and is marked by many features. The tremendous increase in direct obligations of the government has given federal government bonds a dominant position. The financing by the government of its budgetary deficits during the period 1933–1940 was facilitated by the large inflow of gold which broadened the credit base and thereby supported the demand of banks for new securities. With the diminished inflow of gold in May, 1941, and the outbreak of the war in December, 1941, the government adopted a war financing plan which called for (a) the meeting of a large percentage of war expenditures through increased tax levies and (b) the borrowing of the balance of the expenses from non-commercial bank investors. Until the plan could be put into effect, however, the banks were called upon to supply a large part of the needed funds. The amount of funds needed was so large that banks had to abandon the practice of maintaining large excess reserves. To facilitate those changes in banking practice, the government (a) assured the banks of sufficient reserves to meet any needs which might arise, (b) issued a large volume of short-term obligations which, because of their high degree of liquidity, lessened the necessity for banks to maintain excess reserves, and (c) adopted a policy of fixed interest rates for

<sup>10</sup> A Treasury bond is deliverable on the day following the sale.

the duration of the war. The pattern of war financing as announced by the Treasury in 1942 provided for rates ranging from  $\frac{3}{8}$  of 1 per cent for three months' Treasury bills to 2 per cent for ten-year bonds, the longest-term securities to be offered to commercial banks. Offerings of longer-term  $2\frac{1}{2}$  per cent bonds were designed to serve the needs of others than commercial banks for long-term permanent investments.

During the nineteen months following the outbreak of the war, commercial banks increased their holdings of government securities by approximately \$30,000,000,000. Inasmuch as the deposits created by those purchases represented a potential danger as a basis for an inflationary rise in commodity prices, commercial banks were not eligible to participate in the Third War Loan and were restricted in their subscriptions to the subsequent loans. The Seventh War Loan excluded 2 per cent bonds and restricted bank ownership of the longer-term issues until ten years before maturity. Commercial bank demand for bonds available to them in the open market was intensified, causing a price advance for the outstanding 2 per cent issues and a general reduction in the yields on Treasury bonds.

The federal bond market is the only domestic securities market that is actively supported by the government. The Federal Reserve System and the Treasury, through the Open Market Committee, have supported the market by buying federal issues when they have shown signs of weakening in price and by selling when an undue rise in price is in prospect. This was evidenced when the Federal Reserve banks and the Treasury purchased \$450,000,000 of government bonds at the outbreak of the war in Europe in September, 1939, and again by the purchase of \$130,000,000 of bonds in December, 1941, after Pearl Harbor was attacked. The federal Open Market Committee sought to maintain stable yield relationships between the different maturity groups of Treasury obligations by purchasing or selling specific Treasury issues. In order to offset the effects of the increase in currency circulation, the earmarking of gold for foreign account, and the transfer of funds to the accounts of foreign central banks with the Reserve banks, the Committee maintained a fixed general level of interest rates by absorbing Treasury securities. The Federal Reserve banks stood ready to make loans to member banks at  $\frac{1}{2}$  of 1 per cent against short-term government obligations and to buy all Treasury bills offered at a fixed rate of  $\frac{3}{8}$  of 1 per cent. Effective August 3, 1942, purchases



of such bills, if desired by the seller, were made on condition that the Reserve bank, upon request before maturity, would sell back bills of like amount and maturity at the same rate of discount. Since May 15, 1943, all purchases have been made subject to repurchase option.

Although a very small part of the trading in government issues occurs on the New York Stock Exchange, they enjoy a very high degree of marketability. Orders in federal issues are readily executed and trading in them is exempt from government regulation, including margin requirements of the Federal Reserve Board.

Government issues are the basis of the investment market. Should they become worthless, no corporate security could have value. The strength of government obligations lies in confidence in the stability of the government and in its ability and willingness to meet its obligations.<sup>11</sup>

### Review Questions

1. Name the purposes for which the federal government has issued bonds.
2. Indicate the relation between the budgetary surplus or deficit and the gross debt.
3. What is the present legal debt limit?
4. Distinguish between the interest-bearing debt and the non-interest-bearing debt.
5. Name the kinds of obligations issued by the Treasury.
6. Describe Treasury bonds and notes from the standpoint of maturity, redemption feature, and trading market.
7. Distinguish between Treasury bills and Treasury certificates of indebtedness.
8. Discuss the significance of United States Savings bonds.
9. Discuss the nature of United States Treasury Savings notes.
10. Discuss the nature of Panama Gold 3's, Conversion Gold 3's, Postal Savings Gold 2½'s, Depositary 2's, Adjusted Service 3's and 4½'s.
11. Discuss the nature of the indirect debt of the federal government.
12. Are Treasury obligations secured or unsecured?
13. Name two tests of federal government bonds.
14. What are the government's chief sources of revenue?
15. Discuss the relation between the government's ability to pay on the one hand and the national income on the other.
16. Discuss the record of the government's willingness to pay.
17. Discuss the tax position of federal government bonds with reference to federal and state taxes.
18. Describe the important features of the federal government bond market.
19. Discuss the investment position of federal government bonds.

<sup>11</sup> Government bonds sold in the 70's in 1921 not because of fear for the credit of the government but because of the high interest rates prevailing at that time.

## Assignment

- (a) Compute the price on a U. S. Treasury bond selling at 100.3.
- (b) Compute the accrued interest on a U. S. Treasury  $2\frac{1}{2}$  per cent bond, interest payable March 15 and September 15, bought on Monday, March 2, 1944. Compute the accrued interest on the same bond bought on Tuesday, November 16, 1945.
- (c) Account for the difference in quotation on the following U. S. Treasury bonds:

<i>Issued</i>	<i>Maturity</i>	<i>Bid</i>	<i>Asked</i>
2's Dec. 8, 1939 . . .	1948-1950 . . .	104.10	104.12
2's Jan. 15, 1942 . . .	1949-1951 . . .	101.27	101.29

- (d) Interpret the maturity on U. S. Treasury  $2\frac{1}{2}$ 's of 1967-1972.
- (e) Interpret the price of U. S. Treasury notes selling at 100.18+.
- (f) Account for the difference in price of the following U. S. Treasury bonds:

	<i>Bid</i>	<i>Asked</i>
$2\frac{1}{2}$ 's, June 15, 1967-72 . . . . .	100 22	100.24
$2\frac{1}{2}$ 's, Sept. 15, 1967-72 . . . . .	104.30	105.00

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## CHAPTER TEN

### STATE BONDS

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**State debt.** State governments borrow funds through the issuance of bonds principally to finance the construction of long-term improvements such as highways, park developments, state institutions, grade-crossing elimination, and waterways, and to finance emergency unemployment relief. The total debt of New York State in 1944, for example, amounted to \$611,915,500 and consisted of bonded debt of \$611,108,000 and temporary capital loans of \$807,500:

	1944	1943
Term Bonds:		
Highways . . . . .	\$ 80,000,000	\$ 80,000,000
Palisades Interstate Park . . . . .	5,000,000	5,000,000
Forest preserve . . . . .	2,500,000	2,500,000
Canals . . . . .	141,000,000	141,000,000
Total . . . . .	\$228,500,000	\$228,500,000
Serial Bonds:		
Highways . . . . .	\$ 10,800,000	\$ 11,200,000
Forest preserve . . . . .	2,700,000	2,800,000
Canals . . . . .	3,672,000	3,808,000
Institutions — buildings . . . . .	54,900,000	58,500,000
Park system . . . . .	8,701,000	9,112,000
General improvement . . . . .	54,390,000	58,245,000
Grade-crossing elimination . . . . .	139,415,000	143,315,000
Emergency construction . . . . .	28,600,000	30,600,000
World War bonus . . . . .	10,800,000	12,600,000
Emergency unemployment relief . . . . .	41,500,000	60,000,000
Housing . . . . .	27,130,000	19,200,000
	\$382,608,000	\$409,380,000
Total bonds . . . . .	\$611,108,000	\$637,880,000
Temporary capital loans: . . . . .	807,500	3,723,000
Grand total . . . . .	\$611,915,500	\$641,603,000

**Restrictions on debt.** Many states have placed restrictions upon the creation of state debt.<sup>1</sup> The most common restrictions provide that the credit of the state cannot be used for private benefit, that

<sup>1</sup> New Hampshire, Vermont, Massachusetts, and Connecticut have no constitutional restrictions on the creation of state debt.

bonds may be issued only for long-term improvements, and that large issues must be approved by a popular referendum. Arkansas adopted a constitutional amendment in 1934 which provided that no new bonded debt pledging the faith and credit of the state could be issued without the consent of the electorate except for refunding purposes and for assuming and refunding valid road-improvement district bonds. In addition to the usual restrictions mentioned above, New York requires that all bonds must be serial in form, that all bonds must mature within the estimated life of the improvement, and that the proceeds of each issue must be segregated into a special fund to be used only for the designated purpose and not combined with the general funds of the state. Over half of the total bonded debt of New York in 1944 consisted of serial bonds. The State Constitution was amended in 1938 to permit the issuance of callable bonds. A legislative act passed in 1943 specified the maximum maturity for certain bonds by providing for general improvement bonds up to forty years, grade-crossing bonds up to forty years, and housing bonds up to fifty years, but granted the State Comptroller permission to issue serial bonds for a lesser period. Under these amendments, the state issued \$12,000,000 of grade-crossing bonds in 1943 with a maturity of twenty years but callable after ten years. They mature at the rate of \$600,000 annually up to and including 1963. This issue marked the first time the state had borrowed for twenty years instead of forty for grade-crossing elimination purposes and the first time that it had issued a callable bond.

**State expenditures.** The expenditures of a state consist of expenditures for operating expenses and debt service and for capital purposes. Expenditures for debt service include the annual interest charges and the provision for repayment of the principal, which may involve the redemption of maturing serial issues or provision for a sinking fund. The debt service of New York State in 1940, for example, amounted to \$55,000,000 and consisted of \$36,000,000 principal and sinking fund and \$19,000,000 interest.

**Tests.** State bonds, in general, like federal government issues, are debenture obligations and are secured simply by the promise of the state. Two tests may be applied to the analysis of state bonds: (a) capacity to pay and (b) willingness to pay.

**Capacity to pay.** Like the federal government, the capacity of a state to meet its obligations depends upon the taxing power and the revenue derived from the taxes. The relative dependence

of states upon the various types of taxes is indicated by the following percentages of all taxes collected:<sup>2</sup>

Gasoline . . . . .	19.8	Licenses on specific occupations . . . . .	4.3
Retail sales . . . . .	17.1	Tobacco . . . . .	3.6
Income . . . . .	16.2	Insurance companies . . . . .	3.1
Motor vehicle . . . . .	10.1	Utility excise . . . . .	2.9
Alcoholic beverages . . . . .	7.1	Inheritance and gift . . . . .	2.8
Property . . . . .	6.6	Miscellaneous . . . . .	5.8

The revenue of the State of New York, for example, is derived from general business, excise, income, and transfer taxes. The revenues received for the year ending March 31, 1944, were as follows:

General business taxes:			
Corporation . . . . .	\$29,831,195		
Utilities . . . . .	17,978,709		
Corporation franchise . . . . .	86,893,401		
Unincorporated business . . . . .	13,898,294		
Bank . . . . .	7,070,636		
Insurance premiums . . . . .	3,393,168	\$159,065,403	
Excise taxes:			
Motor vehicle . . . . .	35,744,825		
Motor fuel . . . . .	39,654,122		
Alcoholic beverage . . . . .	23,490,092		
Alcoholic beverage lic . . . . .	9,247,858		
Cigarette . . . . .	25,086,624	133,223,521	
Personal income tax . . . . .		86,615,561	
Taxes on transfers:			
Inheritance and estate . . . . .	19,059,316		
Stock transfer . . . . .	16,870,567		
Pari-mutuels . . . . .	18,511,987		
Mortgage . . . . .	1,384,724	55,826,594	
Miscellaneous . . . . .		2,737,506	
		437,468,585	
Other revenues . . . . .		15,681,954	
Total . . . . .		\$453,150,539	

*Net debt percentage.* The capacity of a state to meet its obligations may be measured by three tests: (a) net debt percentage, (b) net debt per capita, and (c) debt service/total revenue receipts. Net debt percentage is the relation between the net debt of the state and the assessed value of taxable property in the state. Net debt represents the gross debt less sinking funds and self-supporting debt. Since sinking funds and self-supporting debt do not represent a burden on the taxpayer, they are eliminated from the gross debt in order to determine the net debt for the support of which taxes must be levied. For example, New York State with a gross debt of \$611,915,500 and sinking funds of \$149,327,733

<sup>2</sup> Moody's Investors Service, Government Securities Manual, 1945, p. a 25,

had a net debt of \$462,587,767. Some states, on the other hand, are classed as debt-free states. This does not necessarily mean that the state is free of debt but rather that it has accumulated a sinking fund equivalent to the gross debt. For example, North Carolina in 1945 had a gross debt of \$47,501,000 and sinking funds of \$6,750,000. A legislative act transferred \$51,585,000 from the general fund surplus to the sinking fund, thereby increasing the sinking fund to \$58,335,000.

The assessed valuation of taxable property in a state represents the property available for taxation in support of the net debt. A net debt of \$462,587,767 for New York State, for example, represented 1.8 per cent of the assessed valuation of \$25,053,937,000.

The appraisal of the net debt percentage, however, is limited by two factors. In the first place, assessment methods vary greatly throughout the state and the country. A net debt percentage of  $2\frac{1}{2}$  per cent in a state using an average appraisal basis of 80 per cent of market value is equivalent to a net debt percentage of 2 per cent on a 100 per cent rate of assessment. For example, a state with a net debt of \$100,000,000 and an assessed valuation of \$4,000,000,000 on an 80 per cent rate of assessment has a net debt percentage of  $2\frac{1}{2}$  per cent ( $\$100,000,000/\$4,000,000,000$ ). On a basis of 100 per cent rate of assessment, however, the total assessed valuation would be \$5,000,000,000 and hence a net debt percentage of 2 per cent ( $\$100,000,000/\$5,000,000,000$ ). In like manner, a net debt of \$100,000,000 on an assessed valuation of \$2,500,000,000 with a 40 per cent rate of assessment would show a net debt percentage of 4 per cent. On a 100 per cent rate of assessment, the net debt percentage is 1.6 per cent ( $\$100,000,000/\$6,250,000,000$ ). The average rate of assessment in New York State in 1944 was 92.48 per cent compared with 92.22 per cent in 1943 and 89.43 per cent in 1942. On a 100 per cent basis in 1944, the estimated true valuation in the state was \$27,091,194,000 and the net debt percentage 1.7 per cent. In the second place, the state receives the greater part of its revenue from sources other than general property taxes; some states do not levy a general property tax.

*Net debt per capita.* Net debt per capita seeks to express the debt burden in terms of population. For example, New York with a net debt of \$462,587,767 in 1944 and a population of 13,479,142 had a net debt per capita of \$34.32, compared to \$36.80 in 1943 and \$38.41 in 1942. In analyzing the net debt per capita, however, consideration must be given to the growth in population of the

state relative to that of the country as a whole. It is reasonable to expect a state to enjoy a rate of increase comparable to the country in order to maintain its economic position. The rate of increase of New York, for example, has compared very favorably with that of the entire country. The rate of increase has been as follows:

	U S.	N Y
1900 . . . . .	20 7%	21 6%
1910 . . . . .	21 0	24 6
1920 . . . . .	14.9	14 2
1930 . . . . .	16.1	21.1
1940 . . . . .	7 0	7 1

Furthermore, a state with a large amount of wealth can more conveniently carry a higher per capita net debt than a state with more limited wealth. A net debt per capita of \$41.52 for New York State represents no greater burden to the state than a net debt per capita of \$28.39 for South Carolina.

*Debt service/total revenue receipts.* The capacity to pay may be further tested by the relation of the annual debt service to the total receipts. The annual debt service comprises interest, repayment of principal on serial bonds, and appropriations for sinking funds. The debt service of New York State in 1944 amounted to \$48,531,-412, or 10.7 per cent of the total revenue received. As a rule, the debt service of a state represents less than 15 per cent.

**Willingness to pay.** The sovereign position of the state makes willingness to pay a very important factor to investors in state bonds. Under the Federal Constitution, the state is not subject to interference from the federal government. This was definitely established by the Tenth and Eleventh Amendments. The Tenth Amendment, effective December 15, 1791, provided that: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively or to the people." When in 1793 Chisholm, a citizen of the State of North Carolina, holding a defaulted bond of the State of Georgia, sued the State of Georgia in the federal courts, his right to sue was upheld.<sup>3</sup> The Eleventh Amendment, adopted to protect state sovereignty, provided that "the judicial power of the United States shall not be construed to extend to any suit in law or in equity, commenced or prosecuted against any one of the United States by Citizens of another State, or by Citizens or Subjects of any Foreign State." In other words, while one state may

<sup>3</sup> Chisholm v. Georgia, 2 Dall. (U. S.) 419.

sue another state, an individual, personal or corporate, cannot sue a state without the latter's consent. The Constitution of New York State, however, specifically grants this permission:<sup>4</sup>

The legislature shall annually provide by appropriation for the payment of the interest upon and installments of principal of all debts created on behalf of the State . . . as the same shall fall due, and for the contribution to all of the sinking funds. . . . If at any time the legislature shall fail to make any such appropriation, the comptroller shall set apart from the first revenues thereafter received, applicable to the general fund of the State, a sum sufficient to pay such interest, installments of principal, or contributions to such sinking funds, as the case may be, and shall so apply the moneys thus set apart. The comptroller may be required to set aside and apply such revenues . . . at the suit of any holder of such bonds.

*Default record.* The willingness of states to meet their obligations may be judged in part by the record. The record, however, is not entirely free of defaults. At three different periods, numerous states have defaulted in the payment of interest and principal on outstanding bonds.<sup>5</sup> In most cases the defaults represented repudiation rather than postponement of the payment. In more recent years the State of Arkansas attempted to force holders of its bonds to accept new bonds at a lower rate of interest by refusing to continue interest payments on the older issues.<sup>6</sup> Analysis of the record of the states shows that when the debt burden becomes excessive and the tax burden too heavy, states do repudiate their bonds. Legally, the debt service ranks equally with the operating expenses in a claim against the tax revenues. In some instances, however, budget deficits have led the states to subordinate the claim of the debt service. In the last analysis, therefore, willingness to pay is closely related to convenience and convenience is largely dependent upon capacity.

*Tax-rate limitation.* The capacity of a state to pay must be considered in terms of the nature of the constitutional limitation, if any, on the tax rate. Some states include the debt service in this limitation; others exclude the debt service. For example, Alabama limits state taxation to 0.65 per cent of taxable property,<sup>7</sup> and North Carolina restricts the state tax to five cents on one hundred

<sup>4</sup> Article VII, section 16, State Constitution.

<sup>5</sup> During 1840-1842, 1848-1860, and 1865-1883.

<sup>6</sup> The older issues carried coupon rates ranging from 4½ to 5 per cent. Under a refunding program adopted in 1934, however, provision was made for the eventual payment of interest in full.

<sup>7</sup> In 1911 the legislature changed the basis of assessment from 100 per cent to 60 per cent; consequently, since that date only 0.39 per cent (60 per cent of 0.65) of the full value has been levied.



dollars of property value,<sup>8</sup> without exception in each instance for debt service. The Constitution of South Carolina, on the other hand, places no limit upon the rate of property taxes which may be levied by the state. The Constitution of New York State provides that if annual appropriations are not made for the debt service charges by the legislature, the State Comptroller must make such provision from the first general revenues thereafter received. In 1943 Arkansas adopted a law which is applicable in instances where the specific funds from which direct obligations are payable become depleted so that default of principal or interest seems imminent. Under the law the State Investment Board may purchase such securities out of state treasury balances for bond purchase account and redeem the securities later from money received by the respective funds.

Investors in state bonds must rely primarily upon the good faith of the state and should prefer the obligations of those states which pledge their "full faith and credit," whose constitutions provide for unlimited taxation for debt service, and whose tax revenues are adequate.

**Position of state bonds.** The market for state bonds is largely institutional, the demand coming from banks, trustees, and insurance companies and from some wealthy individual investors. The appeal arises from the tax-exemption features, eligibility as legal investments, and acceptability for surety deposits. Interest on state bonds is fully exempt from federal income taxes upon the principle of reciprocal freedom from taxation as stated by the United States Supreme Court in *Pollack v. Farmers' Loan & Trust Company*.<sup>9</sup>

As the states cannot tax the powers, the operations, or the property of the United States, nor the means which they employ to carry their powers into execution, so it has been held that the United States have no power under the Constitution to tax either the instrumentalities or the property of a State.

The interest on many state bonds is fully exempt from state income taxes by the state of issue if locally owned. The interest may be taxed, however, by another state if located or owned in the taxing state.<sup>10</sup> The appeal of state bonds for surety deposits arises out

<sup>8</sup> The state has not levied a general property tax since 1920.

<sup>9</sup> 157 U. S. 429, 584 (1895).

<sup>10</sup> In October, 1881, the United States Supreme Court decided in the case of *Bona-<sup>10</sup>parte v. Tax Court* (104 U. S. 592) that the Constitution does not prohibit a state from including in the taxable property of her citizens so much of the debt of another state as they hold regardless of whether the debtor state may exempt such debt from taxation or actually tax it.

of the fact that they may be used by banks in lieu of surety bonds to guarantee the safety of deposits of state funds and by insurance companies under the state laws requiring policy guarantees.

### Review Questions

1. Name the purposes for which state governments borrow.
2. Name the usual constitutional restrictions upon the creation of state debt.
3. Name the restrictions in New York State
4. Name two general classes of state expenditures.
5. Indicate the two tests of a state bond.
6. Are state bonds secured or unsecured?
7. Indicate the source of the capacity of a state to pay.
8. Indicate the sources of revenue of New York State.
9. Name three tests of a state's capacity to pay.
10. Explain the computation of net debt percentage and net debt per capita.
11. Indicate the limitations to the interpretation of net debt percentage and net debt per capita.
12. Indicate the items included in the annual debt service.
13. Discuss the relation of debt service to total revenues.
14. Discuss the legal position of the holder of a state bond which is in default.
15. Discuss the record of state defaults.
16. Indicate the priority of claim of debt service and operating expenses against the tax revenues
17. Explain the relation between debt and tax burden on the one hand and default on the other.
18. Explain the nature and significance of a constitutional limitation on the tax rate.
19. Discuss the tax position of state bonds.
20. Comment on the market for state bonds.

### Assignment

- (a) Compute the net debt percentage (on a 100 per cent basis) and net debt per capita from the following data:

Assessed valuation	. . . . .	\$25,753,000,000
Total bonded debt	. . . . .	635,544,000
Sinking funds	. . . . .	145,372,000
Population	. . . . .	13,479,142
Average rate of assessment	. . . . .	80 %

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## CHAPTER ELEVEN

### MUNICIPAL BONDS

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**Introduction.** Municipalities are public corporations organized under a general corporation law of the state or by special charter under a separate legislative act and possessing certain powers delegated by the state which permit them to act as agencies for local administration. Municipalities raise the necessary funds to finance their activities by levying taxes and by borrowing.

**Kinds of agencies.** Municipal bonds are issued by three types of agencies: (a) regular governmental units, such as counties, cities, towns, villages, and boroughs; (b) special tax districts, such as school districts or sewer districts; and (c) statutory authorities, such as bridge authorities or port authorities.<sup>1</sup>

**Purposes of borrowing.** The purposes for which a municipality may borrow are usually stated either in the state constitution or in the municipal charter. In general, municipal bonds are issued to finance such public improvements as buildings, fire equipment, parks, schools, sewerage disposal plants, water supply facilities, street improvements, and many other improvements.

**Bond maturities.** In recent years many states have prohibited the issuance of municipal bonds with maturities beyond the estimated life of the improvement financed by the issue of the bond. The New York State Constitution requires the legislature to fix the maturities for various types of bonds issued by counties, cities, towns, and districts in the state. In accordance with this provision, legislation has been adopted which seeks to assure that bonds issued by the local governments will not remain outstanding after the project for which they have been issued has ceased to be useful. The periods of probable usefulness set by the law are 50 years for

<sup>1</sup> State bonds are also considered as a class of municipal bonds in the securities markets. The bond issues used in compiling the Dow-Jones municipal yield index include the following state bonds: New York State 4's, North Carolina 4's, Illinois 4's, Missouri 4's, and California 4's.

water systems, docks, and rapid transit; 30 years for grade-crossing elimination; 20-40 years for bridges and tunnels; 20 years for sewer systems and electric light and power or gas systems; 10 years for airports and parks; 5-10 years for roads; 5 years for fire apparatus; and varying periods for buildings according to the type of construction.

The New York law also provides that bonds must mature in annual installments. The first installment must be paid not more than one year after the date of issue or not more than two years after the date of the certificates of indebtedness or notes issued in anticipation of the sale of the bonds. The last installment must mature not later than the expiration of the period of probable usefulness of the object or purpose for which the bonds were issued. In no event may the last installment be more than forty years, except as expressly authorized. No installment may be more than 50 per cent in excess of the smallest prior installment.

**Classes of bonds.** Municipal bonds are either general or limited obligations. General obligations are those for which the full faith and credit of the municipality is pledged. The municipality agrees unconditionally to pay the obligation from the general revenues. Limited obligations, on the other hand, are payable solely out of special assessments or revenues. Limited obligations consist of special assessment bonds and revenue bonds.

**Special assessment bonds.** Special assessment bonds are sometimes issued to finance such improvements as streets, sewers, or sidewalks. To meet the interest and principal of these obligations, the municipality levies special assessments (which are in addition to the regular taxes) upon the property legally benefited by the improvement and earmarks the revenues received from those special assessments for the support of the debt service on the bonds. Some special assessment bonds are a claim against the special assessments levied and collected but, in addition, the municipality pledges that if the proceeds of the special assessment prove inadequate the bonds will become a charge against the full faith and credit of the municipality. Other special assessment bonds are payable only from the money collected from the special assessments. The municipality simply acts as trustee and is not legally bound to pay the interest or principal. It is liable only for due diligence in levying and collecting the special assessments and in applying the proceeds to the payment of the bonds. Seattle, Washington, for example, has had outstanding \$11,108,922 of assessment bonds which were a lien solely against property in specific districts.

**Revenue bonds.** Municipal revenue bonds are bonds issued by a municipality to finance the construction, acquisition, enlargement, or improvement of a public utility facility, such as a water works or an electric light and power plant.<sup>2</sup> The bonds are payable out of the revenues derived from the operation of the project. Seattle, for example, has outstanding municipal revenue bonds consisting of water revenue bonds, light and power revenue bonds, and street railway revenue bonds. The principal and interest of the bonds are payable solely from the revenues of the respective utilities. Under a revenue bond the municipality agrees to operate the property and to use the receipts for the payment of the debt. It does not agree, however, to levy taxes or to make appropriations from the general fund in the event the utility revenues prove inadequate to meet the debt service on the revenue bonds.

The increase in the use of this type of bond has been especially rapid since 1930 — a period characterized by a marked increase in public ownership of utility properties. Municipalities have been attracted to the use of those bonds as a means of keeping down (a) the regular debt, since revenue bonds are not included in the direct debt, and (b) the tax rate, since the revenue bonds are not payable out of the general taxes.<sup>3</sup> In Seattle, limited obligations have represented approximately 80 per cent of the total debt, while direct obligations have been less than 20 per cent. Revenue bonds have accounted for almost 70 per cent of the city's total debt.

Revenue bonds have been considered as equal to general lien bonds on the ground that they are a lien against projects that are self-supporting, self-liquidating, and independent of tax collections. In some instances the interest on revenue bonds has been paid in full while the city has been in default in the payment of interest on its general lien bonds. In other instances, however, declining revenues have threatened interest payments on some revenue bonds. The best record has been made by revenue bonds issued to finance water works. The low default record in those bonds has been due in large part to the fact that municipal water works have a monopoly on a fundamental service which is indispensable to individual consumers.

**Tax districts.** Tax districts represent a special form of municipal government created for a specific limited purpose, that is, schools, parks, sewers, hospitals, irrigation, drainage, flood control, and

<sup>2</sup> Regular governmental units and tax districts occasionally issue revenue bonds, but statutory authorities use this type of financing almost exclusively.

<sup>3</sup> See page 219.

roads. Typical of these districts are the Toledo City School District (Ohio), Chicago Park District (Illinois), Chicago Sanitary District (Illinois), Fairfax Drainage District (Kansas), and Miami Conservancy District (Ohio). A tax district may encompass part or all of a city or it may include several cities. The Board of Education of the city of Chicago, for example, is the corporate title of a tax district comprising the same territory as that included within the boundaries of the city of Chicago. The Supreme Court of Illinois has held that the school district is a separate and distinct corporation and that the board can legally establish a debt-incurring power separate from that of the city of Chicago. The Albany Port District was created by an act of the New York State Legislature to supplement the work of the federal government in its project to open the Hudson River to deep-water navigation and is coextensive with the cities of Albany and Rensselaer, located on opposite sides of the Hudson River. It is a state agency but was created under the joint auspices of the federal and state governments. The federal government originally appropriated over \$11,000,000 for the dredging of a channel in the Hudson River and, in addition, provides an annual fund of \$300,000 for maintenance of the channel. The District has erected and maintains port facilities.<sup>4</sup> The Miami Conservancy District in Ohio was organized in 1915 as a political subdivision of the state for the prevention of floods. It embraces 169,600 acres along the Miami River and covers portions of nine counties and includes the cities of Dayton, Hamilton, Middletown, Piqua, and Troy.

A tax district, like a regular governmental unit, has the power to levy taxes upon property within its jurisdiction. The payment of taxes levied by the district is just as mandatory upon the property owner as the payment of general taxes.

*Investment position.* The investment position of tax district bonds depends upon (a) the purpose for which the district was created and (b) the taxable wealth in the district. Experience of investors with school and port district bonds has been more favorable than with road, drainage, or irrigation district bonds. The excellent record of school district bonds, as a class, has been due to the fact that (a) education is accepted as a basic need in every community, and (b) the greatest expansion of these facilities has occurred in rapidly developing areas. The poor record of drainage

<sup>4</sup> The District is governed by a commission of five members, four of whom must be residents of the city of Albany and one of the city of Rensselaer.

and irrigation district bonds, on the other hand, has been due largely to the fact that heavy assessments have materially increased farm overhead beyond the ability of the taxpayers to pay.

**Authorities.** Authorities are public corporations created by a special act of the legislature to finance the construction and operation of such revenue projects as bridges, power plants, and port facilities. They differ from municipalities and tax districts in that they do not possess the power to tax but must depend upon the projects to produce the necessary revenues. The Port of New York Authority is a municipal corporate instrumentality of the state of New York and of New Jersey, created with the consent of Congress by the compact of April 30, 1921, between the two states, to carry out a pledge of "faithful cooperation in the future planning and development of the Port of New York." It is a public corporation governed by a board of twelve commissioners, six from each state, and is authorized to purchase, construct, lease, and operate terminal and transportation facilities within the Port of New York district, to make charges for the use of those facilities, to hold, lease, and operate real and personal property, to borrow money, and to secure loans by bonds and mortgages. The Authority does not have the power to levy taxes but must derive its income from tolls, rents, and other charges for the use of its bridges, tunnels, and terminal buildings. The district comprises an area approximately 25 miles in radius and includes the city of New York and sections of Newark, Paterson, Passaic, Jersey City, and Hoboken.

The Pennsylvania Turnpike Commission was authorized to construct, operate, and maintain a toll turnpike through the Allegheny Mountains. The turnpike, which is 161 miles long, extends from Middlesex, near Harrisburg, to Irwin, near Pittsburgh. The bonds issued to finance the project are supported by the revenue derived from tolls.

The Washington Toll Bridge Authority was created as an agency of the state of Washington and constructed the Tacoma Narrows Bridge and the Lake Washington Bridge. The bonds issued to finance the projects were supported by toll charges. The former bridge collapsed in November, 1940. Insurance companies paid to the Authority \$240,000 as use and occupancy insurance and \$4,000,000 as multiple risk insurance. In October, 1941, all of the bonds secured by the revenues of the Tacoma Bridge were retired at 104 and interest.

While the strength of authority bonds depends upon the toll

revenues, more fundamentally it rests upon the strategic importance of the project. Thousand Islands Bridge Authority issued bonds in 1937 to finance the Thousand Islands bridges connecting the United States and Canada at Alexandria Bay, New York. These bonds were secured by the revenue derived from tolls collected from users of the bridge. The decline in bridge revenue following the opening of war in September, 1939, resulted in those bonds going into default in September, 1942. The bonds of the Port of New York Authority, as originally issued, were secured basically by the toll revenues of the specific project for which they were issued. The varying profitable operation of each of the projects was reflected in the market prices of the respective issues. The Authority has since refunded those issues into new bonds which, in contrast to the old, are secured equally and ratably regardless of issue or purpose by a pledge of the net revenues of all the projects operated by the Authority.

**Net debt.** Analysis of municipal debt involves consideration of gross and net debt. The gross debt of a municipality represents all obligations issued by it. It includes, however, bonds which are sustained by self-supporting projects and bonds for which a sinking fund has been established. Bonds which are sustained by self-supporting projects are not a burden on general taxes. By the same token, to the extent that a sinking fund has been built up on a direct obligation of the municipality, the tax burden is reduced. The real burden upon the tax revenues is the net debt, which is calculated as the gross debt less self-supporting debt and sinking funds on the direct debt. For example, the city of Baltimore, Maryland, with a total debt of \$168,896,000, which included \$56,982,562 of self-supporting bonds, had a direct debt of \$111,913,438. Inasmuch, however, as the city had a sinking fund of \$29,745,003 for the direct debt, the net direct debt of the city was \$82,168,435.

**Debt limit.** In most states the borrowing capacity of municipalities is restricted by a net debt limit. This net debt limit is usually expressed as a maximum percentage of the assessed valuation of the taxable property in the municipality. The limits range from 2 per cent in Kentucky to 20 per cent in Florida.<sup>5</sup> The net debt-incurring power of New York City, for instance, is limited to 10 per cent of a five-year average of total assessed value of taxable real estate. The

<sup>5</sup> Municipalities have avoided debt-limit restrictions by raising the rate of assessment, by creating tax districts, or by issuing revenue bonds either directly or indirectly through the creation of statutory authorities.



debt-incurring power of New York City on a recent date was as follows:<sup>6</sup>

Total debt-incurring power . . . . .	\$1,602,141,742
Gross funded debt . . . . .	2,942,065,797
Exempt funded debt . . . . .	1,239,291,729
Non-exempt funded debt . . . . .	1,702,774,068
Net sinking funds and debt service on non-exempt debt . . . . .	429,732,657
Funded debt within limit . . . . .	1,273,041,411
Net land and contract liability-Cr. . . . .	50,594,522
Total debt within limit . . . . .	1,223,635,933
Remaining power within limit . . . . .	378,505,809
Reservations and authorized . . . . .	198,298,791
Unreserved margin . . . . .	\$ 180,207,018

The total debt-incurring power of \$1,602,141,742 represented 10 per cent of the five-year average of assessed value of taxable real estate. The city's gross funded debt of \$2,942,065,797 included exempt funded debt of \$1,239,291,729, which consisted of the following bonds not included in the constitutional limitation:

Water supply bonds . . . . .	\$582,498,823
Dock bonds . . . . .	60,412,000
Rapid transit bonds . . . . .	596,380,906
	<u>\$1,239,291,729</u>

The non-exempt funded debt of \$1,702,774,068 less the net sinking funds and debt service on the non-exempt debt of \$429,732,657 left a funded debt within the debt limit of \$1,273,041,411. A net land and contract liability credit of \$50,594,522 decreased the total debt within the debt limit to \$1,223,635,933. The remaining legal debt-incurring power of \$378,505,809 was further reduced by reservations and authorized debt of \$198,298,791, leaving an unreserved margin of \$180,207,018.

**Analysis of municipal bonds.** The analysis of municipal bonds involves consideration of three factors: capacity to pay, willingness to pay, and legality of issue.

**Capacity to pay.** The capacity of a municipality to pay its obligations rests upon its taxing power. The chief sources of tax revenues are real property, personal property, and franchises. The total real property in a municipality includes taxable property and non-taxable private and public property. For example, approximately 70 per cent of the total real property in New York City is taxable and 30 per cent non-taxable. The non-taxable property consists of property owned by the city itself, by the federal govern-

<sup>6</sup> Report of the Comptroller, City of New York.

ment, by New York State, and by religious, educational, and other tax-exempt organizations. Obviously the basic source of tax revenue is the taxable property.

In many municipalities personal property also is taxable. The city of Baltimore, Maryland, for instance, reported that approximately 30 per cent of the reported assessed valuation represented the assessed valuation of personal property. As a rule, however, tax officials usually face the practical problem of appraising such property, with the result that payment on it is easily evaded.

Franchise valuations refer to that part of the property of public utility companies which is located on public property and is usually calculated on the basis of both the tangible property employed and the intangible right to occupy the public property. The tax rate on franchise valuation is generally the same as on real property.

**Ratio analysis.** The capacity of a municipality to meet its obligations is usually measured by two ratios: net debt percentage and net debt per capita.

*Net debt percentage.* The net debt percentage expresses the relationship between the net debt, which must be supported by taxes, and the assessed valuation of taxable property, which is the chief source of the tax revenues. For example, a city with a net debt of \$82,168,435 and assessed valuation of \$1,664,037,410 has a net debt percentage of 4.9 per cent.

*Net debt per capita.* The net debt per capita expresses the relationship between the net debt and the population and indicates the amount of net debt per person. A city with a net debt of \$2,447,741,314 and a population of 7,454,995 has a net debt per capita of \$328.35. Proper interpretation of this ratio, however, requires consideration of assessed valuation per capita and tax revenues per capita. A high net debt per capita is no great cause for concern if accompanied by a correspondingly high assessed valuation per capita and high tax revenues per capita.

**Limitations.** The analysis of the capacity of a municipality to meet its obligations must take into consideration several limiting factors: tax rate limitation, overlapping tax districts, rate of assessment, and the tax rate.

*Tax-rate limitation.* While fundamentally the assessed valuation represents the property value subject to taxation for the support of the credit of the municipality, many states place a limit on the tax rate by specifying a maximum rate. For example, Alabama, Arkansas, Indiana, Michigan, Nevada, Ohio, Pennsylvania, Texas, Wash-

ington, and West Virginia have tax limit legislation of one kind or another.

The tax rate limitation imposed by the state upon municipalities may include or exclude the debt service. The tax rate limitation in Michigan, Arkansas, and Nevada, for example, includes the debt service. Michigan limits the aggregate of all property taxes for all units of government for all purposes to 15 mills (\$15 per \$1,000) of valuation. Arkansas places a tax rate limitation on cities of \$5 per \$1,000 for debt and for general purposes. Nevada provides that the total tax levy in any municipality for all purposes, including levies for bonds, shall not exceed five cents on each dollar of assessed valuation. On the other hand, some states, such as New York and Indiana, exempt the debt service from the tax rate limitation. In those instances the tax limitation applies to operating expenses but does not apply to the debt service. While many municipalities in New York, for example, are limited to a total tax rate of 2 per cent (\$20 per \$1,000), the limitation does not apply to the debt service.

Obviously tax-rate limitation, which includes debt service, adversely affects the credit position of the municipality. The extent to which such a limitation may affect the position of municipal bonds was illustrated by the experience of the city of Richmond, Virginia. When the proposal to create a greater Richmond was made, one difficulty encountered was the disparity between the tax rates of the city proper and of the suburban territory to be annexed to the city. To appease the voters of the suburban area, it was agreed that the tax rate in the annexed area would not be increased for five years. Under those circumstances Richmond could not sell an unlimited tax obligation. The lack of unlimited taxing power cost the city about one quarter of 1 per cent on an issue offered subsequent to the consolidation. The restriction of a tax-rate limit also tends to encourage municipalities to finance their needs either by revenue bonds or by tax district bonds, neither of which are directly part of the tax load, or by the over-assessment of property. On the other hand, bonds issued by municipalities where there is no tax-rate limitation or where the tax-rate limit does not include debt service are commonly known as unlimited tax bonds. Usually they enjoy a better investment rating than limited tax bonds.

*Overlapping tax districts.* The determination of the debt which rests upon the assessed valuation involves consideration of over-

lapping, underlying, and coterminous tax districts. Debts of the larger geographic areas are usually referred to as overlapping, those of the smaller units as underlying, and those of units with the same boundaries as coterminous. For example, the city of Albany, New York, reported a net debt of \$14,630,429, assessed valuation of \$240,160,139, and a population of 130,577. On this basis the city had a net debt percentage of 6.0 per cent and a net debt per capita of \$112.04. This statement, however, did not give recognition to the fact that the actual debt burden upon the assessed valuation of Albany also includes that city's share of the debt of the Albany Port District.

The Albany Port District is coextensive with the cities of Albany and of Rensselaer, located on opposite sides of the Hudson River. Bonds issued by the District, which amounted to \$6,475,000, are payable from unlimited ad valorem taxes levied on all taxable property in the cities of Albany and Rensselaer. Taxes are apportioned on the basis of 87.89 per cent for Albany and 12.11 per cent for Rensselaer, with the result that Albany is liable for \$5,690,878 ( $\$6,475,000 \times 87.89$  per cent) of the District bonds. The total net debt resting upon the assessed valuation of Albany is \$20,321,307 rather than \$14,630,429. On this basis the city of Albany has a net debt percentage of 8.7 per cent and a per capita debt of \$155.62.<sup>7</sup>

Other illustrations of the significance of overlapping debt in 1944 were found in the cities of Chicago, Los Angeles, and Philadelphia. Those cities reported a net direct debt of \$45,478,000, \$29,588,000, and \$282,537,000, respectively. When consideration was given, however, to the overlapping debt, the total net direct and overlapping debt was \$256,008,000, \$220,838,000, and \$319,249,000, respectively. While Florida was engaged in its great boom in the 1920's which subsequently ended disastrously, many municipalities in the state were floating general lien and tax district bonds recklessly. In some instances a dozen governmental units had floated debts each of which was a separate burden on property in the same small area.

*Rate of assessment.* The rates at which property is assessed for tax purposes vary widely throughout the country, ranging from 100 per cent to 37 per cent. The average rate of assessment is approximately 100 per cent in Idaho, 80 per cent in New York State, and 75 per cent in North Carolina. The average rate also

<sup>7</sup> In addition, consideration must be given also to the city's share of the debt of Albany County.

may change from year to year. For example, the rate in New York State has increased from 84.45 per cent in 1937 to 92.48 per cent in 1944. For that reason a comparison of the net debt percentage of one community over a period of years or of one community with another involves consideration of the rate of assessment. Obviously a net debt percentage of 3 per cent for city A does not reflect a lower debt burden than 5 per cent for city B if the former employs a rate of assessment of 80 per cent compared with 40 per cent for the latter. On a 100 per cent basis, the assessed valuation is \$500,000,000 in each instance and the net debt percentage is 2.4 per cent in city A and 2.0 per cent in city B.

*Tax rate.* By the same token, a comparison of the tax rate prevailing in two municipalities must be judged in the light of overlapping tax districts and rates of assessment. For example, the city of Oakland, California, reported a tax rate of \$52.40 per \$1,000 of assessed valuation compared to \$51.93 for Los Angeles. These respective rates included taxes for tax districts as follows:

	<i>Oakland</i>	<i>Los Angeles</i>
County	\$11 90	\$11.91
City	21 90	17 12
School . . . . .	16 00	16 10
Water . . . . .	2.00	4 80
Others . . . . .	60	2 00
	<u>\$52 40</u>	<u>\$51 93</u>

The rate of assessment in Oakland, however, was 35 per cent compared with 50 per cent in Los Angeles. On the basis of a 100 per cent rate of assessment, the tax rate for Oakland was \$18.34, compared to \$25.97 for Los Angeles.

**Willingness to pay.** A municipality, unlike a state, is a corporation and as such can be sued if in default on its obligations. The usual procedure open to holders of municipal bonds in default is to obtain a court writ of mandamus which requires the municipal authorities to levy and collect sufficient additional taxes to meet the claim. For example, writs of mandamus were issued by the courts in 1937 against the city of Coral Gables, Florida, directing the city officials to make provision in the 1937-1938 budget for a six-year levy on four judgments totaling \$171,356. Under the provisions of the writs, the city was required to include a total of \$28,562 for debt service in the budget in addition to interest and court costs during the first year and similar amounts each year thereafter until the total amount was paid during the sixth year. Under the Municipal Bankruptcy Act, however, a municipality may file a petition

stating that it is insolvent or unable to meet its debts as they mature and that it desires to effect a plan for the composition of its debts.

Willingness of a municipality to meet its obligations is largely a matter of ability and good faith, the former being measured in terms of capacity and the latter in terms of its financial history. Inability to pay has been too commonly pleaded as a reason for default when, in fact, the main reason has been unwillingness to levy higher tax rates. Some municipalities have attributed inadequacy of tax revenues and inability to increase tax rates to tax-limit legislation. In any event, however, the real reason in most cases has been inability. For this reason the tax collection record must be considered as a measure of inability. A poor collection record is generally indicative of either inadequate collection machinery, unaggressive collection policy, insufficient local income to support the present scale of governmental expenditures, or the presence of a large amount of unproductive real estate.

Tax delinquencies present a problem to municipal administrators. If installment payments are accepted and liberal abatements of penalties allowed, taxpayers are encouraged to take advantage of the liberal terms granted delinquents.<sup>8</sup> Experience has shown that in years of business decline collections fall off, while in years of business recovery collections improve as back taxes are liquidated. The percentage of current taxes collected in New York City has averaged better than 90 per cent compared to approximately 80 per cent in Chicago.

**Legality of issue.** Equally important is the legality of the issue. While bondholders may sue a municipality to compel payment, a bond which has been illegally issued is invalid and uncollectible.

*Caveat emptor.* Under the principle of "caveat emptor," which means "let the buyer beware," buyers of illegally issued bonds, which therefore are not valid obligations, may not plead ignorance or innocence. This principle is based on the fact that all negotiations involving the issue are open to public inspection and the laws governing the issue are a matter of public record. Investors buy at their own risk and may not plead ignorance of any defect should illegality later be established.<sup>9</sup>

<sup>8</sup> In South Carolina the tax lien of the county is valid for ten years but only for three years for cities and towns

<sup>9</sup> While in some instances the courts have held some municipal bonds with minor technical defects as valid obligations, the doctrine of "caveat emptor" is generally applied.

The procedure for the issuance of a municipal bond is prescribed by law. The violation or omission of any required provision in the procedure may be the basis of illegality. The most common specific causes of illegality have been: (a) inadequate authority under the municipal charter to issue the bonds; (b) issuance of the bonds for an unauthorized purpose; (c) violation or omission of any of the details prescribed in the procedure; or (d) issuance of bonds in excess of the constitutional or statutory debt limit. In one instance, after bids had been received by a municipality and the bonds awarded, it was discovered that the maturities as set up in the issue did not conform with the requirements of the law under which they were authorized. The deposit check had to be returned, the terms of the issue revised, and the bonds readvertised for sale.

*Legal opinion.* For this reason the investor must rely upon the legal opinion which is the written opinion of a firm of recognized municipal bond attorneys that the bonds have been issued legally. The opinion usually states specifically that: (a) the bonds have been issued in accordance with constitutional legislation; (b) statutory authority was obtained; (c) the debt limit, if any, of the municipality will not be exceeded as a result of the issue; and (d) the statutory requirements for proper procedure have been carefully followed. To facilitate the sale of the bonds to investors after the bonds have been awarded, a number of states require cities to include in the instrument a validation clause which constitutes a predetermination of all points which might be the basis of litigation. As a result, the doctrine of estoppel prohibits the municipality from advancing any claim of illegality at a later date. It is significant, however, that such validation is not in effect in all states.

The advertisement inviting bids on the issue usually states that the successful bidder will be furnished with a copy of the legal opinion which usually accompanies the delivery of the bonds. For example, the prospectus accompanying the offering of \$4,200,000 of bonds by the city of Baltimore, Maryland, stated:

These bonds, issued for Voting Machine, Public Buildings, Public Library and Water purposes, in the opinion of counsel, constitute valid and legally binding obligations of the City of Baltimore, Maryland, and said City of Baltimore has power and is obligated to levy ad valorem taxes for the payment of said bonds and the interest thereon upon all real property within said City subject to taxation by said City, without limitation of rate or amount. Legality approved by Messrs. Wood, Hoffman, King and Dawson, New York City.

**Market for municipal bonds.** Municipal bonds are traded over the counter through dealers who specialize in this field. Dealers

usually buy municipal bonds offered for sale by investors and carry them as inventory until they can place them with other investors. The risk of wide price fluctuations adversely affecting this inventory is limited, however, since municipal issues are less subject than corporate issues to daily economic, financial or political developments. Dealers offer the securities to investors, institutional or otherwise, through salesmen and printed lists.

The full-lot unit of trading is \$10,000 par value. This figure arises out of two features of municipal bonds: (a) most issues are of small or medium size and (b) the larger issues are commonly serial bonds. While many large municipalities are frequent borrowers, each issue usually finances a specific improvement for which a relatively small amount of money is needed. On the other hand, the widespread use of serial bonds for large improvements has resulted in each maturity constituting a separate issue for trading purposes. For example, New York City sold \$75,000,000 of bonds which for purposes of illustration may be referred to as series A, B, C, D, E, and F. Series A bonds for \$14,700,000 were issued to finance the construction of an airport and were payable in twenty-nine annual installments. Series B, issued for various municipal purposes, amounted to \$860,000 and were payable in four equal annual installments. Series C bonds for \$7,290,000 consisted of \$6,300,000 for various municipal purposes, \$810,000 for construction of schools, and \$180,000 for dock improvements. They were payable in nine equal annual installments. Series D for \$11,750,000 included \$4,250,000 for various municipal purposes and \$7,500,000 for construction of schools and were payable in twenty-five equal annual installments. Series E for \$9,000,000 were issued to finance construction of rapid transit railroads and were payable in thirty equal annual installments. Series F for \$31,400,000 consisted of \$7,000,000 for construction of rapid transit railroads and \$24,400,000 for water supply. They were payable in forty equal annual installments. The serial maturities consisted of \$8,150,000 maturing 1946-1954, \$35,450,000 maturing 1946-1975, and \$31,400,000 maturing 1946-1985.

The market for municipal bonds is largely institutional in that the principal buyers are usually insurance companies, banks, and trustees, each of which are interested primarily in safety. Municipal bonds also appeal to wealthy investors to whom the tax exempt features of the bonds are important.

**Tax position.** Municipal bonds are exempt from all federal income



taxes.<sup>10</sup> The tax-exemption feature also applies to authority bonds. The United States Tax Court and the Circuit Court of Appeals, in a case involving the bonds of the Port of New York Authority and the Triborough Bridge Authority, both of New York, held that income from the bonds is exempt from federal taxes under the terms of the various revenue acts of Congress which declare that there shall be no taxation of the income of the obligations of a state or a political subdivision thereof. This decision was upheld by the United States Supreme Court, which denied a petition for review of the lower court's decision.

**Distribution.** The wide distribution of a municipal issue is not considered as essential or important as it is in the instance of a corporate issue. For this reason an issue is sometimes placed with a relatively few investors, and, in some instances, with a single investor.

In recent years high-grade municipal bonds have sold at yields of less than 3 per cent.<sup>11</sup> While municipal bonds as a class are regarded as high-grade investments, the market also includes many issues of relatively inferior grades. Municipal bonds, as a class, however, are purchased for investment, that is, for a regular income rather than for speculation through price appreciation. As a result, the element of speculative trading is at a minimum.

### Review Questions

1. Indicate the nature of a municipal corporation.
2. Name the three types of agencies issuing municipal bonds.
3. Explain the purposes for which municipalities borrow.
4. Indicate the constitutional limitations upon municipal borrowing.
5. Distinguish between general and limited municipal obligations.
6. Describe special-assessment bonds.
7. Distinguish between "general-special" and "special-special" assessment bonds.
8. Discuss the investment position of special assessment bonds.
9. Describe municipal revenue bonds.
10. Account for the increased use of revenue bonds.
11. Discuss the investment position of revenue bonds.
12. Explain the function of a tax district.

<sup>10</sup> Pollack v. Farmers Loan & Trust Co, 157 U. S. 429, 584 (1895).

<sup>11</sup> Standard and Poor's Corporation reported the following average yields on fifteen high-grade municipal bonds:

1937 . .	3.10	1939 . .	2.76	1941 . .	2.10	1943 . .	2.06
1938 . .	2.91	1940 . .	2.50	1942 . .	2.36	1944 . .	1.86

13. Discuss the investment position of tax district bonds.
14. Explain the nature of an "authority."
15. Distinguish between an authority on the one hand and a municipality and a tax district on the other.
16. Discuss the investment position of authority bonds
17. Distinguish between the gross debt and the net debt of a municipality.
18. Discuss the significance of a legal net debt limit.
19. Name the three factors in the analysis of municipal credit.
20. Indicate the basis of a municipality's capacity to pay.
21. Name the chief sources of tax revenues.
22. Distinguish between total real property value and taxable real property value.
23. Explain the calculation of and the significance of net debt percentage and net debt per capita.
24. Name four limiting factors in the analysis of capacity to pay.
25. Explain the meaning of tax rate limitations.
26. Discuss the relation of tax rate limit to debt service.
27. Discuss the significance of overlapping tax districts.
28. Explain the significance of the rate of assessment.
29. Explain the relation of the rate of assessment and the tax rate.
30. Describe the procedure open to holders of municipal bonds in default.
31. Discuss the basis of a municipality's willingness to pay.
32. Indicate the relation between the tax collection record and willingness to pay.
33. Describe the problem presented by tax delinquencies.
34. Indicate the investment position of an illegally issued municipal bond.
35. Explain the meaning of the principle of "caveat emptor."
36. Name the common causes for illegality.
37. Discuss the significance of the legal opinion accompanying the delivery of a municipal bond.
38. Indicate the nature of the legal opinion.
39. Describe the market for municipal bonds.
40. Indicate the usual unit of trading.
41. Why is the market largely institutional?
42. Indicate the tax position of municipal bonds.
43. Indicate the average yield on high-grade municipal bonds.

### Assignment

- (a) Using a 100 per cent basis, compute and compare the net debt percentage and the tax rate of the following cities:

	<i>City A</i>	<i>City B</i>
Assessed valuation . . . . .	\$4,000,000,000	\$6,400,000,000
Rate of assessment . . . . .	50 %	80 %
Gross debt . . . . .	\$200,000,000	\$300,000,000
Sinking funds . . . . .	30,000,000	20,000,000
Revenue bonds . . . . .	50,000,000	40,000,000
Tax rate per \$100 of assessed valuation . . . . .	\$4.60	\$3.20

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## CHAPTER TWELVE

# CORPORATE FINANCIAL STATEMENTS

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**Fields of analysis.** Corporate securities available for investment may be classified broadly according to the nature of the industry as securities of railroads, public utilities, and industrial companies, and of financial institutions. Railroad companies are engaged in the transportation of freight, passenger, and other kinds of traffic. The public utility companies provide electric light and power, gas, telephone service, telegraph service, water, bus and street railway service. The service rendered by them is (a) affected with a public interest, (b) provided under a franchise contract, and (c) subject to governmental regulation. Railroads also are considered a public utility in a broad sense, but certain characteristics inherent in the nature of the operation of railroad companies, such as magnitude and area, place their securities in a separate investment category.

Industrial companies, on the other hand, are engaged in a wide range of activities that may be conveniently classed as extractive, productive, and distributive. Companies engaged in the extractive industries operate mines, oil wells, timber lands, fisheries, and so forth. Those in the productive industries produce a wide variety of manufactured articles. Companies in the distributive industries merchandise products at wholesale or retail, direct to consumers or by mail.

Financial institutions include commercial banks and insurance companies. Commercial banks usually combine commercial banking and trust activities. Insurance companies underwrite life insurance or fire and casualty insurance. Investment interest in the large life insurance companies is limited, however, because of the prevalence of the mutual form of organization. The more important casualty companies, on the other hand, are stock companies.

**Regulation.** The quasi-public nature of the activities of railroads, public utilities, banks, and insurance companies has made them

subject to regulation by the federal government and by states. Railroad and public utility companies engaged in interstate commerce, public utility holding companies subject to the Public Utility Holding Company Act of 1935, and commercial banks that are members of the Federal Reserve System are subject to federal regulation.

Railroads engaged in interstate commerce are regulated by the Interstate Commerce Commission. The regulatory powers of the Commission have been widened considerably since its creation in 1887, and many of them directly affect the investment position of railroad securities.

Public utility, electric, and gas holding companies were brought under federal regulation by the Public Utility Act of 1935. A holding company is defined by the Act as "any company which directly or indirectly owns, controls, or holds with power to vote, 10 per centum or more of the outstanding voting securities of a public utility company." All such holding companies must be registered with the Securities and Exchange Commission. In general, the Act provides for (a) the integration of properties controlled by holding companies and (b) the simplification of the capital structures of holding companies. Under the integration provision, sometimes referred to as the "death sentence clause," continued existence is accorded only to those holding companies which can justify their economic existence. The simplification of capital structures provision was aimed at holding companies with complicated capital structures involving a complex group of intermediate holding companies. The Securities and Exchange Commission's conception of "integration" was demonstrated in its orders affecting the Central & South West Utilities Company, a subsidiary of Middle West Corporation, and the American Gas & Electric Company. In the former instance the Commission permitted the company to retain its four Texas and Oklahoma subsidiary properties, maintaining that continued existence of the holding company was justified where the degree of coördination of a system's utility facilities and their economical operation depends in part on common control. In the latter instance, the Commission allowed the company to retain its Central or "backbone" system, stretching across seven midwestern and Appalachian states, on the grounds that the Central system approached the maximum size which the Commission considered consistent with the standards of localized management, efficient operation, and effectiveness of regulation.

Railroad and public utility operations in purely intrastate commerce, as well as state commercial banks and insurance companies, are under the jurisdiction of the respective states. Industrial companies, on the other hand, are not subject to regulation by any specific public body.

**Railroads.** Most of the railroad systems in the United States are engaged in interstate commerce and operate over extensive territory. For example, the Atchison, Topeka & Santa Fe Railway, which is one of the largest of the western trunk lines, operates 13,147 miles extending west from Chicago to Los Angeles and San Francisco. The Atlantic Coast Line Railroad extends from Richmond, Virginia, to points in the lower Florida peninsula, forming a through line with a network of branches radiating throughout North Carolina, South Carolina, Georgia, Alabama, and Florida.

Railroads engaged in interstate commerce are subject to extensive regulation by the Interstate Commerce Commission. The phases of this regulation which are of especial interest to the investor concern freight rates, new security issues, and reports.<sup>1</sup>

*Freight rates.* The Transportation Act of 1920 provided for the establishment of freight and passenger rates which would permit the railroads to earn a fair return upon a fair valuation of their property. This provision, however, was discarded by the Emergency Railroad Transportation Act of 1933, under which the Commission is directed to fix individual freight rates that are just and reasonable, but to give due consideration to "the effect of rates on the movement of traffic; to the need, in the public interest, of adequate and efficient railway transportation service . . .; and to the need of revenues sufficient to enable the carriers, under honest, economical, and efficient management, to provide such service."

*New security issues.* Railroads may not issue new securities without the approval of the Interstate Commerce Commission. Such approval, when given, is based upon careful investigation of the purpose of the issue, the amount required, the nature of the security, and the cost of distribution.

*Reports.* The Interstate Commerce Commission also has power to prescribe the accounting methods employed by the railroads. The Commission has established a uniform classification of accounts known as the "Classification of Income, Profit and Loss, and Gen-

<sup>1</sup> In addition, new railroad mileage may be constructed and existing mileage abandoned only with the approval of the Commission. The permission of the Commission also is necessary for the consolidation of two roads.

effect so long as it is mutually satisfactory to the public authority and the company. It usually provides that the public authority may terminate the franchise in the event of unsatisfactory service on the part of the company or if the public authority decides to take over and operate the service. The terms under which the public authority may take over the properties are usually stated in the franchise. This is the most desirable type of franchise from the standpoint of the investor.

A typically large public utility company may commonly represent a consolidation of several individual companies each of which operates under a separate franchise, serves a local community, and provides a special type of service. For example, Arkansas Power & Light Company, which is engaged principally in the generation and purchase of electric energy and its distribution and sale, operates in 446 communities in Arkansas and serves a very substantial portion of the state. Its territory includes the cities of Little Rock, Pine Bluff, El Dorado, Hot Springs, and North Little Rock. The company also provides natural gas service in 18 communities, water service in 21, and ice in 56 communities. In addition, the company provides steam heating service in Little Rock. The company holds franchises from each of the communities which it serves, but those franchises are of varying durations. The franchise issued by Little Rock is perpetual. Those issued by Malvern, Pine Bluff, and El Dorado are limited in duration, the first expiring in 1950, the second in 1951, and the third in 1965. On the other hand, those issued by Camden and Russellville are indeterminate.

*Operating conditions.* Public utility franchises may be competitive or exclusive. Under a competitive franchise, the company is simply given the privilege of providing the service. The public authority reserves the right to grant franchises to other companies or to establish its own service. In the city of Cleveland, Ohio, for example, the Cleveland Electric Illuminating Company operates in competition with a municipal plant. The Southwestern Public Service Company competes with municipal power plants in three municipalities in Texas.

The exclusive type of franchise, on the other hand, gives the company the sole right to provide the service in the community. An exclusive franchise, however, does not necessarily assure the company against unfavorable developments. A company with an exclusive franchise to provide gas, for example, may be adversely affected by the increased use of fuel oil for heating purposes or

electricity for cooking, especially if the alternative service is provided at a lower cost than gas. In other instances, the growing popularity of other means of transportation has considerably lessened the profitable operation of street railway companies in spite of exclusive franchises. Fundamentally, the fact that a franchise is exclusive is not protection against a decline in earnings should alternative services be developed or the territory served suffer a decline in economic importance.

*Territory served.* Public utility operating companies serve a distinctly local market. The franchise states the territory within which the company may operate. In some cases this territorial restriction has prevented an operating company from extending its service to rapidly growing contiguous territory. For example, the franchise of the Commonwealth Edison Company limits its service to the corporate boundaries of the city of Chicago. As a result, the company serves the east side of Austin Boulevard, which is the municipal boundary line, but cannot serve the west side of the street, which is in Oak Park, a separate municipality.

*New security issues.* Public utility companies may not issue new securities without the approval of the regulatory body having jurisdiction. Under the Public Utility Holding Company Act of 1935, companies owning or controlling 10 per cent or more of the voting securities of an electric or gas utility company or exercising a controlling influence over the management or policies of such a company must file a declaration with the Securities and Exchange Commission with respect to any proposed issue of securities. The declaration becomes effective unless the Commission finds that the security issue fails to meet the standards set forth by the Act for determining the financial structure of a company and the nature of the securities which may make up that structure. In like manner, public utility operating companies must obtain the approval of the state public service commission. In New York State, as in most states, securities may be issued only to construct new property, buy existing property, better existing property, or refund existing debt. In addition, the amount must be reasonable for the purpose, the form (bonds or stock) in harmony with a balanced capitalization, and the cost of distribution reasonable. The New York Public Service Commission, for example, authorized the New York Power & Light Corporation, an operating company in the Niagara Hudson Power System, to invite public bidding on an issue of \$50,000,000 of first mortgage thirty-year bonds. The Commission ordered that interest on the

new bonds was not to exceed 3 per cent, that the call price initially was not to exceed the offering price plus 3 per cent of the principal amount and that the premium be reduced annually, and that the company either set aside the sum of \$65,000 monthly before dividend payments until a reserve of \$7,500,000 is created, or create the reserve immediately by restating the common stock valuation. The proceeds of the new bond issue, together with \$5,000,000 to be raised through the issuance of 50,000 shares of common stock, were to be used to retire \$55,000,000 of the company's  $3\frac{3}{4}$  per cent bonds due in 1964.

Although the approval of a new security issue by the regulatory body having jurisdiction does not constitute an investment recommendation, it does afford investors some degree of protection.

*Rates.* Public utility companies are restricted in the rates which they may charge for the services they provide. The United States Supreme Court in *Munn v. Illinois* declared:<sup>2</sup>

Private property does become clothed with a public interest when used in a manner to make it of public consequence, and affect the community at large. When, therefore, one devotes his property to a use in which the public has an interest, he, in effect, grants the public an interest in that use, and must submit to be controlled by the public for the common good, to the extent of the interest he has thus created.

Rates charged by public utility operating companies are subject to the terms of the franchise under which they operate or to regulation by the state public service commission.

The rate schedule in a public utility franchise may be fixed or flexible. The older type of franchise specified the maximum rate which the utility could charge for its service. In some instances rising costs of material and labor have made it impossible for companies with such rate restriction to earn a satisfactory return. Attempts by the companies to obtain relief from the courts under a claim of confiscation, however, generally have been ineffectual.

The more recent franchises provide for a flexible rate approved by the regulatory commission and based on the cost of the service. The dual purpose of regulation of public utility rates is (a) to protect the customer against unduly high rates and (b) to provide the company with a fair rate of return on the value of the property used in public service. The problem with which the regulatory body is faced in the regulation of rates is to establish (a) the rate base, (b) a fair rate of return, and (c) a rate schedule.

*Rate base.* The rate base is the value of the company's property

<sup>2</sup> 94 U. S. 113 (1876).



used and useful in the public service as determined by the regulatory body. It is the value upon which the utility is permitted to earn a return.<sup>3</sup> The essence of the valuation problem was stated by Justice Brandeis in a minority opinion rendered in the *Southwestern Bell Telephone Company* case:<sup>4</sup>

The thing devoted by the investor to the public use is not specific property, tangible and intangible, but the capital embarked in the enterprise. Upon capital so invested the Federal Constitution guarantees to the utility the opportunity to earn a fair return.

Three principles have been advocated for the determination of utility property valuation: original cost, reproduction cost, and prudent investment. Original cost is based upon the value of the property, tangible and intangible, at the time of acquisition by the company. Original cost is defined as the cost of utility property to the one first devoting it to public service. Reproduction cost is based on the cost of duplicating the property used and useful in providing the service at the time the valuation is made. The advocacy of reproduction cost is based upon the premise that gradual replacement of plant must be made at current prices which, because of changing price levels, renders original cost inequitable. Prudent investment cost is based on a value which a wise and careful management would have given in exchange for the property. It seeks to eliminate inflated values.

In recent years federal and state commissions have adopted original cost prudently invested as the basis of valuation. The Uniform Systems of Accounts prescribed by the regulatory bodies have provided that the difference by which acquisition cost or book cost exceeds the original cost as determined must be included in a "Utility Plant Adjustment" account and depreciated, amortized, or otherwise disposed of in whole or in part as the regulatory commission may approve or direct.

*Rate of return.* The rate of return is the rate which the utility is allowed to earn on its rate base. In the absence of any statutory restriction, each public utility commission is free to establish what it deems a fair rate of return to companies under its jurisdiction. The rate of return adopted by the many state commissions varies from  $5\frac{1}{2}$  to  $6\frac{1}{2}$  per cent. The Federal Power Commission has considered 6 to  $6\frac{1}{2}$  per cent as a reasonable return.

<sup>3</sup> The rate base does not necessarily coincide with the book cost of the property less depreciation.

<sup>4</sup> 262 U. S. 276 (1923).

*Rate schedule.* The rate schedule refers to the specific schedule of individual rates which it is estimated will yield the required rate of return on the rate base. In some instances service rates are adjusted regularly in accordance with a predetermined schedule. Under the Detroit plan for the control of gas rates, for example, the company is allowed a base, or minimum, return of \$3,850,000 plus 7 per cent upon future extensions and improvements. Excess earnings are shared by domestic consumers and stockholders. The first \$550,000 of excess earnings is divided equally between consumers and stockholders, and all above that amount is divided on the basis of 75 per cent to consumers and 25 per cent to stockholders. The share to the consumers is paid in the form of a dividend either in cash or as a credit on the consumer's account.

The Potomac Electric Power Company, which generates and distributes electricity in the District of Columbia and in a limited contiguous territory in Maryland, operates under what is known as the "Washington plan." A fair rate of return is set at 6 per cent. If, however, the return in any one year is between 6 per cent and  $7\frac{1}{4}$  per cent, half of the excess over 6 per cent is used as rate reductions in the following year. If the return is between  $7\frac{1}{4}$  per cent and 8 per cent, the rate reduction is increased by 60 per cent of the excess over  $7\frac{1}{4}$  per cent. When the return exceeds 8 per cent, a further additional amount of 75 per cent of the excess over 8 per cent is used for rate reduction. On the other hand, if the return for any two consecutive years falls below  $5\frac{3}{4}$  per cent of the rate base for each of the years or if the return for any consecutive twelve-month period falls below  $5\frac{1}{2}$  per cent for the same period, the rates are increased in order to yield 6 per cent upon the rate base as of the date of order affecting the change in rates.

*Reports.* Public utility accounting procedure and reports are subject to regulation by the authority having jurisdiction. The Federal Power Commission was established in 1920 to exercise general administrative control over all water-power sites and kindred establishments located on the navigable waters, public lands, and reservations of the United States. Under Title II of the Public Utility Holding Company Act of 1935 it was also given extensive jurisdiction over companies engaged in the interstate sale of power at wholesale. A uniform system of accounts requiring the determination of original cost of property became effective January 1, 1937. In 1938 the Commission was given jurisdiction over interstate transportation and sale of natural gas for resale for ultimate public

consumption. This involved, among other things, the prescription of accounts, records, and cost accounting procedure. Companies brought under the jurisdiction of the Commission by the Act were not relieved, however, from the requirements of state laws. The Federal Communications Commission was established in 1934 and prescribes a uniform accounting system for the companies under its control: telephone, telegraph, and radio-telegraph. Under Title I of the Public Utility Holding Company Act of 1935 the Securities and Exchange Commission was given jurisdiction over the accounting system of registered holding companies and their subsidiaries.<sup>5</sup>

The accounting procedure and reports of public utility operating companies doing an intrastate business are subject to regulation by the state authority having jurisdiction. Standard classifications have been adopted by a large number of states. For example, a uniform classification of accounts has been adopted for electric companies in about thirty states and for gas companies in approximately twenty states. The state commissions also require the compilation and submission of exhaustive reports which, in most states, are submitted annually. The information in these reports forms the basis for the summary sent to the stockholders in the form of the annual report.

**Industrial.** Industrial companies differ from railroad and public utility companies in many respects. They are not restricted by any regulatory body as to the rates they may charge for their products, the amount or kind of securities they may issue, or the nature and content of their reports to stockholders. The absence of such regulation provides a high degree of freedom for the management, but at the same time it complicates the problem of the investor. The investment problem is complicated by such factors as (a) competitive conditions, (b) the nature of the industry, (c) the market served, (d) the character of the management, and (e) the accounting methods.

*Competitive conditions.* In general, industrial companies face highly competitive conditions. A company may be obliged to compete not only with other companies in the same industry but also with companies in other industries. While competition in the

<sup>5</sup> Some companies are subject to the jurisdiction of more than one federal commission. For example, as a registered holding company, Delaware Power & Light Company is subject to regulation by the Securities and Exchange Commission and its purchases, and sales of interstate power bring it under the jurisdiction of the Federal Power Commission.

automobile industry is found among General Motors, Chrysler, Ford, and the so-called independent companies, it is especially keen among the "Big Three." In addition, International Harvester Company, which is primarily a manufacturer of agricultural implements, is also the largest maker of motor trucks in the country.

*Nature of industry.* Industrial companies as a group are subject to wide fluctuations in earnings. The net income of United States Steel Corporation declined from a profit of \$197,500,000 in 1929 to a deficit of \$71,200,000 in 1932 and rose again to a profit of \$116,200,000 in 1944. Such fluctuations in industrial earnings are influenced in part by the nature of the product, the degree of integration of the company, and the inventory problem peculiar to the industry. A company whose product is a necessity, which is highly integrated, and which is not obliged to carry large inventories is generally in a stronger position than one that produces a luxury item, or is poorly integrated, or must carry large inventories at all times. Products for which the demand is relatively stable generally suffer less percentage fluctuations in demand than those for which the demand is subject to considerable change. Integrated companies that control the product from raw material to the finished form, such as United States Steel Corporation, are in a much stronger position than those that must buy the principal raw material from one producer and sell the semi-finished product to another producer, such as American Woolen Company. Companies which are compelled to carry large inventories always face the danger of a decline in the market price of the inventory. The problem of large inventories is especially acute in industries where the inventory consists of perishable merchandise which cannot be withheld from the consumer market to await more favorable prices, such as the meatpacking industry.

*Market served.* The market served varies from one company to another. Some serve a distinctly local market while others serve a national or even an international market. Companies which serve an international market, such as Standard Oil Company of New Jersey, General Electric, American Radiator & Standard Sanitary, and International Harvester, are subject to world-wide changes in economic and political conditions. Many large American companies incurred large losses as a result of the change in government in Russia in 1918.

Some companies concentrate on a limited number of products whereas others have continuously increased the scope of their activities through the manufacture of a more diversified list of

products or by stockholdings in other companies in other industries. The policy of Coca-Cola Company in concentrating on one product is in contrast with that of General Motors, more than half of whose profits come from the sale of products other than motorcars, and Eastman Kodak, which has supplemented its photographic supplies business with activities in the textile field.

*Management.* The management factor is of unusual importance in the industrial field. Management in the industrial field is not only a matter of personnel but of policy. Efficient management has demonstrated its ability to make a successful company out of an otherwise unsuccessful company. The effect of good management was evidenced in the improvement during the 1920's in Corn Products Refining Company, General Motors Corporation, and Chrysler Corporation under new and efficient management. More recently new management enabled Universal Pictures to transform a deficit of \$1,030,000 in 1937 into a profit of \$51,500,000 in 1944.

*Accounting method.* The problem of analysis is further complicated by the absence of uniformity in industrial operations and in accounting procedure. Each company adopts a system of its own. One company may charge certain expenditures as operating expenses whereas another company may capitalize such expenditures. One company may depreciate its assets more rapidly than another company in the same industry. One company may consider a charge as an operating expense whereas another company may treat the same kind of charge as a surplus adjustment.

**Financial statements.** The investor has a claim against or an interest in the issuer as evidenced by the ownership of a bond or a stock, respectively. The nature of the claim or of the interest is indicated by the indenture, in the instance of a bond, or the certificate of incorporation, in the instance of a stock. What is more important to the investor, however, is the value of his claim or interest. This depends primarily upon the financial strength of the issuer. A first mortgage bond of a financially weak company may have considerably less value than that of a debenture bond or even the stock of a financially strong company. The financial strength of the issuer can be determined only by an analysis of its financial statements.

A corporate financial statement is a report to the stockholders by the board of directors and officers on the financial operations of the company for the fiscal period. The fiscal year corresponds with the calendar year in railroad and public utility companies, in commercial

banks and insurance companies, and in many industrial companies. In some industrial companies, however, the fiscal year coincides not with the calendar year but with the business year peculiar to the industry. The extent to which this practice prevails is indicated by the following selected illustrations:

<i>Company</i>	<i>Fiscal Year Ends</i>
May Department Stores . . . . .	January 31
Dow Chemical . . . . .	May 31
Nash-Kelvinator . . . . .	September 30
International Harvester . . . . .	October 31
Swift & Company . . . . .	November 1
Endicott-Johnson . . . . .	November 30

*Annual report.* While the size and detail of the annual report varies from one company to another, the usual report contains the following items: a balance sheet showing the financial condition of the company as of a specific date, usually the last day of the fiscal year; an income statement revealing the income and outgo of the company during the fiscal period covered by the statement; a statement of surplus; and a certification by an independent public accountant firm. In addition, many reports contain a narrative statement by the chairman or president explaining the more important aspects of the company's business during the year and descriptive, statistical, or pictorial matter concerning the company's properties and operations which the management considers of interest to the stockholders.

The certification by the public accountant firm states that it has examined the balance sheet and income statement for the fiscal year, has reviewed the system of internal control and the accounting procedures of the company, has examined or tested accounting records of the company and other supporting evidence by methods and to the extent deemed appropriate by the auditor, has made the examination in accordance with generally accepted auditing standards applicable in the circumstances, and has examined the accounts of the company's wholly-owned subsidiaries. It states, however, that the auditor has not made a detailed audit of all transactions. The certification expresses the opinion that the accompanying balance sheet and statement of profit and loss and surplus fairly present the financial position of the company at the close of the fiscal year and the results of operations for the year, and that the financial statements are in conformity with generally accepted accounting principles and are consistent with the preceding fiscal year.

The contents of the annual reports of banks have undergone considerable change in recent years. Formerly most bank reports to the stockholders contained only the balance sheet, but many current reports also include a detailed statement of earnings and expenses. In addition, many annual reports now give the figures for the preceding year as a basis of comparison with the current year. While the annual report issued by insurance companies to the stockholders is based upon a detailed report prepared in accordance with the regulations of and filed with the state authority, it usually includes only a balance sheet and a list of the security investments. Some recent reports, however, have included an income statement as well.

*Interim reports.* Some companies, such as American Sugar Refining Company, issue only an annual report. Other companies, however, also issue additional reports known as interim reports. Interim reports may be issued semi-annually, quarterly, monthly, or weekly. The most commonly issued interim report is issued quarterly. Monthly and weekly reports are issued by railroad, public utility, and some industrial companies. Railroad companies are required to issue monthly statements of earnings, both gross and net. Most of the larger railroads also issue weekly reports on the number of freight cars loaded. Many public utility companies report earnings monthly and, in the instance of electric power companies, also report weekly totals of their output in kilowatt-hours of electricity. A few industrial companies provide monthly earnings statements or even monthly balance sheets, but this practice is not yet widespread.

**Analysis of financial statements.** The factual information provided by the financial statements is of little value in itself. Its importance, however, lies in its use as a means of forming a judgment of the financial strength of the issuer and of the securities outstanding. Analysis should always precede investment.

The analysis of the financial statements of an issuer confronts the investor with the question: What is the meaning and significance of the figures presented? Basically the investor seeks to determine (a) the solvency or ability of the company to pay its debts as they come due and (b) the fundamental solidarity or stability of the business. To accomplish this objective the investor must adopt an analytical approach and apply a critical analysis to the financial statements. While a knowledge of accounting is basic, the approach of the investor is fundamentally different from that of the account-

ant. The latter is primarily interested in the completeness and technical accuracy of the figures presented. The investor, on the other hand, is interested in extracting from the statement information that will help him to form a judgment upon a specific security issued by the company. The investor must examine the various items critically in order to produce an ultra-conservative statement. He does not seek necessarily to determine the full value of the security but rather to determine a safe minimum value upon which he may rely with some assurance. The basic purpose of the investor is to ascertain the value of the property as a protective element. He faces the inescapable fact, however, that, since some balance-sheet figures are based on going value, they are commonly higher than liquidating value. While analysis is a search for evidences of weakness, it is also a search for indications of strength.

*Ratio analysis.* The relation of one part of the statement to another is usually expressed as a ratio. The underlying principle of ratio analysis is that the proportion or relation of one item to another is far more important than the amount of each item expressed as dollars. Ratios are of three kinds: balance sheet ratios, income statement ratios, and mixed ratios. A balance sheet ratio relates two balance sheet items. An income statement ratio relates two income statement items. A mixed ratio, on the other hand, relates a balance sheet item and an income statement item. Ratios are useful but not necessarily conclusive. The proper use of a ratio involves two considerations: (a) the purpose of the ratio and (b) the limitations inherent in the ratio. Every ratio has distinct limitations which, if ignored, may easily lead to false conclusions. Ratios are simply clues and require examination and confirmation. They should be an aid to, but not a substitute for, good judgment. In addition, the same factors may vary in importance from company to company. Analysis of working capital, for example, is far more important in an industrial company analysis than in the analysis of a railroad or public utility company. Maintenance as reported by a railroad company has a meaning and significance quite different from that reported by a public utility or an industrial company. Furthermore, there are often intangible elements which cannot be readily translated into mathematical figures. Lastly, since the price of a security is a most important factor, a fairly broad knowledge of many issues is necessary to provide a basis for determining relative values.

Analysis of financial statements is not an exact science. The



mathematical computation of relationships by means of ratios is but one of the tools of the investor. Those relationships must be interpreted in the light of current and prospective conditions. The uncertainty of the future precludes the drawing of conclusions based on present information with any degree of immunity from change. The task of the investor is to determine the relative rather than the absolute degree of risk involved in the analysis of any security.

### Review Questions

1. Classify corporate securities according to the nature of the industry.
2. Indicate the range of activities of industrial companies.
3. Name the kinds of companies referred to as financial institutions.
4. Discuss the investment interest in insurance companies.
5. Name the kinds of companies subject to government regulation and explain the reason.
6. Indicate the kinds of companies subject to federal and to state regulation, respectively.
7. Name the phases of federal regulation of railroads of especial interest to the investor.
8. Discuss the rate provisions of the Emergency Railroad Transportation Act of 1933.
9. Describe the conditions under which railroads may issue new securities.
10. Discuss Interstate Commerce Commission regulation of railroad reports.
11. Distinguish between a public utility holding company and an operating company.
12. Explain the significance of a public utility franchise.
13. Distinguish between a perpetual, a limited, and an indeterminate public utility franchise.
14. Distinguish between a competitive and an exclusive franchise.
15. Comment on the relative territory served by a railroad and a public utility operating company.
16. Discuss the conditions under which a public utility holding company and an operating company may issue new securities.
17. Discuss the investment significance of commission approval of a new security issue.
18. Explain the significance of the case of *Munn v. Illinois*.
19. Distinguish between a fixed and a flexible rate clause in a public utility franchise.
20. Explain the purpose of regulation of public utility rates.
21. Indicate the problem faced by regulatory commissions in the regulation of rates.
22. Define a utility rate base.
23. Explain the principles in the determination of utility property valuation.
24. Define a utility rate of return.
25. Indicate current commonly accepted rates of return.

26. Define a utility rate schedule.
27. Indicate the significance of the Detroit and the Washington plans.
28. Explain the ways in which industrial companies differ from railroad and public utility companies.
29. Indicate the basis of the value of a security.
30. Discuss the investment significance of the financial statements of a company.
31. Define a corporate financial statement.
32. What is meant by a company's fiscal year?
33. Indicate the items commonly found in a corporate annual report.
34. Discuss the significance of the auditor's certification.
35. Explain the investment significance of interim reports.
36. Discuss the significance of the factual information in the financial statement.
37. Indicate the analytical problem of the investor.
38. Define a ratio.
39. Discuss the underlying principle of ratio analysis.
40. Distinguish between balance sheet ratios, income statement ratios, and mixed ratios
41. Indicate the consideration involved in the proper use of a ratio.

### Assignment

- (a) Indicate whether the following companies are classed as railroad, public utility, industrial, or financial: Irving Trust, Consolidated Edison (N. Y.), Illinois Central, and International Business Machines.
- (b) Indicate the fiscal year of the following companies: Armour & Co., Sears Roebuck, American Tobacco, Continental Baking, and United Shoe Machinery.
- (c) Identify the railroads associated with the following names: Frisco; Mop; Sopac; St. Paul; Rock Island; Burlington; Nickel Plate; Norfolk; B. & O.
- (d) Indicate the classes of companies over which the following commissions have jurisdiction and the nature of the jurisdiction: Securities and Exchange, Federal Power, Interstate Commerce, and Federal Communications.

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## CHAPTER THIRTEEN

### INCOME STATEMENT

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**Introduction.** The income statement reports the income and charges for the period between the close of the last fiscal year and the close of the current fiscal year. From the analytical standpoint the income statement reveals the sources of total income, the distribution of total income, and the changes in the surplus. The total income is derived from two sources: operating and non-operating activities. The operating section of the income statement includes the operating revenues or net sales, the operating expenses, and the operating profit. It reports the income from the regular operations of the company, the expenses incurred to secure that income, and the difference or net profit from operations. The non-operating section of the income statement reveals the income received from and the expenses incurred in operations not directly related to the operating activities of the company, such as income from security investments and royalties on patents and processes. The aggregate of net profits from operations and the net revenue from non-operations is the total income. The distribution of total income is made to creditors in the form of fixed charges and to owners in the form of dividends. The surplus section reveals the surplus with which the company began the fiscal year, the surplus earnings for the year, the necessary year-end adjustments of surplus, and the surplus at the close of the fiscal year.

The income statement and the balance sheet are interdependent. The balance sheet shows the condition of the company at the close of the fiscal year as a result of the operations during the year. The nature and the results of the operations, however, are reported in the income statement. The assets produce the income and the income, in turn, is distributed to those having claims against or an interest in the company. (The income statement is a statement of causes whereas the balance sheet is a statement of effects.) The

change in the net worth as reported in two successive balance sheets is explained in the income statement for the intervening fiscal period.

The income statement is of interest to the investor in determining (a) the sources of income and the nature of expenditures, (b) changes in the amounts and sources of income and expenses, and (c) the stability of earnings available for distribution to the security holders.

Although corporate balance sheets follow a more or less standard general form, income statements in contrast show considerable variation. The income statement of a railroad and of a public utility are prepared in accordance with conditions peculiar to those industries and differ materially from that of an industrial company.

## CHESAPEAKE &amp; OHIO RAILWAY

## INCOME STATEMENT, 1944

Operating Revenues:	
Freight Traffic . . . . .	\$184,876,712
Passenger Traffic . . . . .	23,506,846
Transportation of Mail . . . . .	1,579,200
Transportation of Express . . . . .	756,556
Miscellaneous . . . . .	5,816,934
Total Operating Revenues . . . . .	\$216,536,248
Operating Expenses:	
Maintenance of Way and Structures* . . . . .	26,649,293
Maintenance of Equipment* . . . . .	42,853,703
Traffic . . . . .	3,039,179
Transportation . . . . .	57,561,573
Miscellaneous Operations . . . . .	1,479,827
General . . . . .	5,233,275
Total Operating Expenses . . . . .	\$136,866,850
Net Operating Revenue . . . . .	\$ 79,669,398
Railway Tax Accruals . . . . .	51,154,950
Railway Operating Income . . . . .	\$ 28,514,448
Equipment Rents — Net, Cr. . . . .	6,117,586
Joint Facility Rents — Net, Dr. . . . .	1,818,845
Net Railway Operating Income . . . . .	\$ 32,813,189
Other Income:	
Dividend Income . . . . .	989,141
Other Income . . . . .	978,224
Total Income . . . . .	\$ 34,780,554
Miscellaneous Deductions . . . . .	323,774
Income Available for Fixed Charges . . . . .	\$ 34,456,780
Fixed Charges:	
Rent for Leased Roads and Equipment . . . . .	49,691
Interest on Debt . . . . .	7,066,093
Net Income . . . . .	\$ 27,340,995
Disposition of Net Income:	
Income Applied to Sinking Fund and Other Reserve Funds . . . . .	501,715
Income Balance Transferred to Earned Surplus — Unappropriated . . . . .	\$ 26,839,280

\* Includes Depreciation, Depletion, Amortization, and Retirement Charges . . . . \$20,396,060

Railroads and public utilities present the data in accordance with standard forms prescribed by regulatory bodies; no similar standard prevails among industrial companies. While in all cases net income is shown as the balance of income remaining after expenses and charges have been deducted, the differences among railroad, public utility, and industrial income statements lie largely in the manner in which revenue and expense items are presented. The investor experiences the greatest difficulty in industrial income statements not only because of the lack of uniformity but also because of the lack of adequate information, in many instances.

**Operating section.** The operating section reveals the income from operations, the operating expenses, and the net profit from operations.

*Railroad.* Gross operating revenues of a railroad consist of operating revenues from the transportation of freight traffic, passenger traffic, United States mails, and express traffic, and from incidental sources related to transportation such as baggage, dining and buffet, freight and baggage storage, and demurrage. The Chesapeake & Ohio Railway, for example, reported the following operating revenues:

	1944	1943	1942
Freight Traffic . . . . .	\$184,876,712	\$179,128,139	\$163,970,199
Passenger Traffic . . . . .	23,506,846	21,669,414	11,493,584
Transportation of Mail . . . . .	1,579,200	1,373,274	1,200,684
Transportation of Express . . . . .	756,556	754,898	628,340
Miscellaneous . . . . .	5,816,934	5,586,810	4,516,955
	<u>\$216,536,248</u>	<u>\$208,512,535</u>	<u>\$181,809,762</u>

*Public utility.* The total operating revenue of a public utility is derived primarily from the sale of its service. Hartford Electric Light Company, for example, reported the following operating revenue:

	1944	1943	1942
Sales of Electric Current:			
Local Sales . . . . .	\$ 9,992,457	\$ 9,697,696	\$ 9,644,426
Other Electric Corporations . . . . .	2,957,022	2,222,089	1,671,767
Total Sales . . . . .	<u>\$12,949,479</u>	<u>\$11,919,785</u>	<u>\$11,316,193</u>
Miscellaneous Operating Revenue . . . . .	3,327	2,704	19,474
Total Operating Revenue . . . . .	<u>\$12,952,806</u>	<u>\$11,922,489</u>	<u>\$11,335,667</u>

The Hartford Electric Light Company sells only electric service; other companies sell more than one type of service. Public Service Electric and Gas Company of New Jersey, for example, sells both electric and gas service and distinguishes between the two services in reporting operating revenue. In a recent year it reported:

## INVESTMENT ANALYSIS

Operating Revenues:	
Electric Department . . . . .	\$100,248,778
Gas Department . . . . .	34,127,421
	<u>\$134,376,199</u>

## HARTFORD ELECTRIC LIGHT COMPANY

## INCOME STATEMENT, 1944

Electric Current.	
Electric Corporations . . . . .	\$ 9,992,457
Electric Corporations . . . . .	<u>2,957,022</u>
Electric Corporations . . . . .	<u>\$12,949,479</u>
Electric Operating Revenues . . . . .	3,327
Electric Operating Revenue . . . . .	<u>\$12,952,806</u>
Electric Expenses . . . . .	\$ 6,256,800
Electric Expenses . . . . .	647,894
Electric — Expense Accrual . . . . .	588,030
Electric . . . . .	<u>2,981,439</u>
Electric Deductions . . . . .	<u>\$10,474,163</u>
Electric Income . . . . .	\$ 2,478,643
Electric . . . . .	145,969
Electric Income . . . . .	<u>\$ 2,624,612</u>
Borrowed Money, etc . . . . .	\$ 264,748
Interest Accrual . . . . .	304,759
Income Transferred to Surplus . . . . .	<u>\$ 2,055,105</u>

Troitt Edison Company offers a still more varied type of and in a recent year reported:

Electric Department . . . . .	\$80,720,896
Steam Heating Department . . . . .	2,290,779
Gas Department . . . . .	516,064
Water Department . . . . .	19,778
	<u>\$83,547,517</u>

trial. Gross sales, as reported by an industrial company, are the total of the amounts at which the merchandise has been sold to customers. The investor is more interested, however, in net sales, which represents the sales for which payment is forthcoming. It is determined by deducting returns, allowances, discounts, intercompany and divisional sales from gross sales. Corn Refining Company reported gross sales and net sales in a recent year as:

Transportation and other sales deductions . . . . .	\$123,802,532
	<u>12,287,265</u>
	<u>\$111,515,267</u>

Corn Dairy Products Corporation, on the other hand, reported net sales as:

	1944	1943	1942
	\$593,852,943	\$580,173,068	\$562,451,639

## NATIONAL DAIRY PRODUCTS CORPORATION

## INCOME STATEMENT, 1944

Income:		
Net Sales . . . . .	\$593,852,943	
Other Income . . . . .	1,718,465	\$595,571,408
Income Deductions:		
Cost of Products . . . . .	\$441,609,399	
Delivery Expense . . . . .	58,465,919	
Selling Expense . . . . .	24,175,039	
General and Administrative Expense . . . . .	18,892,601	
Cost of Past Service Retirement Annuities . . . . .	1,710,813	
Net Loss on Disposal of Plant and Equipment . . . . .	2,268,725	
Miscellaneous Charges . . . . .	331,884	
Interest on Funded Debt . . . . .	1,798,740	
Provision for Federal Taxes on Income . . . . .	33,000,000	582,253,120
Net Profit (before contingencies) . . . . .		\$13,318,288
Provision for Contingencies . . . . .		None
Balance Transferred to Earned Surplus . . . . .		\$13,318,288

**Operating Expenses.** Operating expenses represent the expenses incurred in securing the operating revenue or net sales. The usual operating expenses are for labor, materials, and overhead.

**Railroad.** In the instance of railroads, operating expenses are classified on the basis of major operating divisions. The standard classification as established by the Interstate Commerce Commission is maintenance expenses, traffic expenses, transportation expenses, and miscellaneous and general expenses. Maintenance expenses represent expenditures for maintenance of way and structures and for maintenance of equipment. Traffic expenses include the expenses incurred in the soliciting of traffic, whereas transportation expenses consist of the direct expenses incurred in the transportation of traffic. Miscellaneous and general expenses include administrative overhead — salaries of officers and clerks, legal fees, pension benefits, and the like. Formerly when railroad property was retired and not replaced, the loss was charged to Profit and Loss account. Effective in 1943, however, the revised accounting regulations of the Interstate Commerce Commission required charging operating expenses with the loss on non-depreciable property retired, whether or not replaced. The following operating expenses were reported by Chesapeake & Ohio Railway:

Maintenance:	1944	1943	1942
Way and Structures . . . . .	\$ 26,649,293	\$ 21,728,913	\$15,850,251
Equipment . . . . .	42,853,703	35,358,969	30,547,841
Traffic Expenses . . . . .	3,039,179	2,617,247	2,680,546
Transportation Expenses . . . . .	57,561,573	49,028,668	41,728,213
Miscellaneous Operations . . . . .	1,479,827	1,290,215	821,957
General Expenses . . . . .	5,283,275	5,021,253	3,786,248
	<u>\$136,866,850</u>	<u>\$115,045,265</u>	<u>\$95,415,056</u>

The chief operating expenses of a railroad, therefore, are transportation, maintenance of equipment, and maintenance of way and structures.

*Public utility.* The operating expenses of a public utility include the ordinary operating expenses and maintenance, depreciation, and taxes (federal taxes and general taxes). Hartford Electric Light Company reported the following operating expenses:

	1944	1943	1942
Operating Expenses . . . . .	\$ 6,256,800	\$5,763,494	\$5,164,942
Maintenance Expenses . . . . .	647,894	538,782	403,869
Depreciation Reserve Accrual . . . . .	588,030	551,246	714,432
Taxes . . . . .	2,981,439	2,594,941	2,756,754
Total Operating Deductions . . . . .	<u>\$10,474,163</u>	<u>\$9,448,463</u>	<u>\$9,039,997</u>

Companies that sell more than one type of service commonly report operating expenses separately for each service. For instance, Public Service Electric and Gas Company of New Jersey reported as follows in a recent year:

Operating Revenue Deductions —

Operating Expenses:

Electric Department . . . . .	\$35,248,584
Gas Department . . . . .	18,649,613
	<u>\$53,898,197</u>

Maintenance:

Electric Department . . . . .	\$ 6,562,621
Gas Department . . . . .	2,566,835
	<u>\$ 9,129,456</u>

Depreciation:

Electric Department . . . . .	\$ 8,717,108
Gas Department . . . . .	1,708,642
	<u>\$10,425,750</u>

Taxes:

Electric Department	
Federal Income Taxes . . . . .	\$10,298,778
Federal Excess Profits Taxes . . . . .	5,415,551
Other Taxes . . . . .	13,081,167
	<u>\$28,795,496</u>

Gas Department

Federal Income Taxes . . . . .	\$ 1,744,280
Other Taxes . . . . .	4,017,574
	<u>\$ 5,761,854</u>
	<u>\$34,557,350</u>

Total Operating Revenue Deductions —

Electric Department . . . . .	\$ 79,323,809
Gas Department . . . . .	28,686,944
	<u>\$108,010,753</u>

*Industrial.* The operating expenses of an industrial company are the usual expenses — cost of goods sold, selling and general admin-



istrative expenses, maintenance, provision for doubtful accounts and depreciation, and state and local taxes. Federal income taxes, however, are not included as operating expenses. Those taxes are considered a distribution of net income. National Dairy Products Corporation reported operating expenses as:

	1944	1943	1942
Cost of Products . . . . .	\$441,609,399	\$436,738,842	\$425,808,285
Delivery Expense . . . . .	58,465,919	56,991,060	57,111,265
Selling Expense . . . . .	24,175,039	22,786,186	26,429,941
Administrative and General Expense . . . . .	18,892,601	16,931,224	15,821,771
	<u>\$543,142,958</u>	<u>\$533,447,312</u>	<u>\$525,171,262</u>

These operating expenses included \$11,779,000 for repairs and maintenance and \$8,663,118 for depreciation in 1944, in contrast to \$9,797,000 and \$8,931,094, respectively, in 1943.

**Net operating profit.** The excess of operating revenue or net sales over operating expenses is referred to in a railroad report as "net railway operating income," in a public utility report as "net operating income," and in an industrial report as "net operating profit."

*Railroad.* The net railway operating income of the Chesapeake & Ohio Railway was reported as follows:

	1944	1943	1942
Operating Revenues . . . . .	\$216,536,248	\$208,512,535	\$181,809,762
Operating Expenses . . . . .	<u>136,866,850</u>	<u>115,045,265</u>	<u>95,415,056</u>
Net Operating Revenue . . . . .	\$ 79,669,398	\$ 93,467,270	\$ 86,394,706
Railway Tax Accruals . . . . .	<u>51,154,950</u>	<u>60,577,698</u>	<u>49,998,352</u>
Railway Operating Income . . . . .	\$ 28,514,448	\$ 32,889,572	\$ 36,396,354
Equipment Rents — Net, Cr. . . . .	6,117,586	6,059,731	4,706,015
Joint Facility Rents — Net, Dr. . . . .	<u>1,818,845</u>	<u>1,733,155</u>	<u>1,458,785</u>
Net Railway Operating Income . . . . .	\$ 32,813,189	\$ 37,216,148	\$ 39,643,584

Net operating revenue is the balance after operating expenses have been deducted from operating revenues and represents the gross profit from operations. It is subject to deduction for railway tax accruals which consist of local property taxes and federal income and payroll taxes. Total taxes of \$51,154,950 for Chesapeake & Ohio Railway in 1944, for example, included \$44,656,117 federal payroll and income taxes and \$6,498,833 state and local taxes. State taxes consisted of payments to the states of Virginia, West Virginia, Kentucky, Ohio, and Indiana. A more detailed statement of tax accruals was reported by the Atchison, Topeka & Santa Fe Railway in a recent year:

Federal Taxes.	
Income, Normal and Surtax . . . . .	\$ 16,304,918
Excess Profits . . . . .	116,947,648
Capital Stock . . . . .	2,256,873
Retirement Annuities . . . . .	5,651,095
Unemployment Insurance . . . . .	5,230,338
Others . . . . .	137,083
Total . . . . .	<u>\$146,563,955</u>
State, Local, and Miscellaneous:	
Ad Valorem . . . . .	8,963,269
Income and Franchise . . . . .	2,385,298
Sales and Use . . . . .	340,694
Others . . . . .	94,015
Total . . . . .	<u>\$ 11,783,276</u>
Grand Total . . . . .	<u>\$158,347,231</u>

Under uniform classification, income taxes are considered as a direct operating expense, in contrast to industrial and general accounting practice, which considers such taxes as a distribution of net income. Under the theory of rate-making by the Interstate Commerce Commission, railroad traffic rates are adjusted so as to permit this tax to be covered before the balance available as a fair return is determined. Railway operating income, therefore, is the balance of net operating revenue.

Railway operating income is subject to adjustments for hire of equipment and joint facility rents. Hire of equipment (debit or credit) results from charges between railroad companies for the use of equipment lent on through traffic, that is, freight shipments originating on one railroad and terminating on another railroad. Chesapeake & Ohio Railway in 1944, for example, reported income of \$6,117,586, representing the excess of rent received for its equipment used by other railroads over the amounts which the Chesapeake & Ohio Railway paid to other railroads for the use of their equipment. Dislocation of the coastwise waterborne coal trade by German submarines in 1943 caused many of the company's coal cars to go to northeastern destinations on other roads and resulted in an increase of 29 per cent in the net rental of equipment, which amounted to \$6,059,731. The Virginian Railway, smallest of the three Pocahontas bituminous coal carriers, also received a large net credit for equipment hire because of the same conditions.

A more detailed statement of the hire-of-equipment item was reported by the New York Central Railroad in a recent report:

	<i>Paid</i>	<i>Received</i>	<i>Balance</i>
Locomotives . . . . .	\$ 197,115	\$ 223,175	Cr. \$ 26,060
Passenger Cars . . . . .	1,721,622	1,801,362	Cr. 79,740
Freight Cars . . . . .	46,990,475	31,200,610	Dr. 15,789,865
Floating Equipment . . . . .	774,584	64,711	Dr. 709,873
Work Equipment . . . . .	17,968	57,538	Cr. 39,570
	<u>\$40 701 764</u>	<u>\$32 247 266</u>	<u>Dr. \$18 254 269</u>

The hire-of-equipment item is variable from year to year for every railroad. The amount involved depends upon the amount and condition of the railroad's own rolling stock, the traffic originated by the railroad and received from connections, the surplus equipment which it may have on hand, and the rapidity with which equipment is handled. A debit balance reported by a railroad is not always necessarily unfavorable. It may be due to a preponderance of interline freight rather than to a shortage of equipment. The railroad which hires the equipment must maintain it. In some instances, however, the apparently excessive maintenance charges of a railroad may be offset by the substantial sums received for rent of its own equipment to other lines. The Norfolk & Western Railway receives annually a large net credit for equipment hire. The Virginian Railway also receives annually a large net credit for equipment hire.

Joint facility rents represent payments for the use of consolidated services such as tracks, yards, bridges, terminals, and stations. The New York Central Railroad, for example, paid \$8,948,771 in a recent year for the use of facilities maintained by other companies and received \$6,311,374 for the use of its facilities by other railroads. The result, however, is usually reported net, as a debit or a credit. Since the New York Central Railroad spent more as joint facility rent than it received, the net was reported as a debit of \$2,637,397. In the instance of the Chesapeake & Ohio Railway the net joint facility rent has been an annual charge ranging from \$1,266,011 in 1941 to \$1,818,846 in 1944. While the net amount varies considerably for individual railroads, the annual amount is generally fairly uniform for any one railroad from year to year.

Net railway operating income is the net income from operations available for the security holders. It is the return received from the capital invested in the operating property.

*Public utility.* Net operating income of a public utility company is the excess of operating revenue over operating expenses. Hartford Electric Light Company reported the following net operating income:

	1944	1943	1942
Total Operating Revenue . . . . .	\$12,952,806	\$11,922,489	\$11,335,667
Total Operating Deductions . . . . .	10,474,163	9,448,463	9,039,997
Net Operating Income . . . . .	\$ 2,478,643	\$ 2,474,026	\$ 2,295,670

The operating income of a company selling more than one type of service is frequently reported for each type. Public Service Electric

and Gas Company of New Jersey, for example, has reported as follows:

Electric Department:	
Operating Revenue . . . . .	\$ 100,248,778
Operating Revenue Deductions . . . . .	79,323,809
	<u>\$ 20,924,969</u>
Gas Department:	
Operating Revenue . . . . .	\$ 34,127,421
Operating Revenue Deductions . . . . .	28,686,944
	<u>\$ 5,440,477</u>
Total Operating Income . . . . .	\$ 26,365,446

*Industrial.* Net operating profit of an industrial company is the excess of net sales over operating expenses. For example, the operating profit reported by National Dairy Products Corporation was as follows:

	1944	1943	1942
Net Sales . . . . .	\$593,852,943	\$580,173,068	\$562,451,639
Cost of Sales and Operating Expenses:			
Cost of Products . . . . .	\$441,609,399	\$436,738,842	\$425,808,285
Delivery Expense . . . . .	58,465,919	56,991,060	57,111,265
Selling Expense . . . . .	24,175,039	22,786,186	26,429,941
Administrative and General Expense . . . . .	18,892,601	16,931,224	15,821,771
	<u>\$543,142,958</u>	<u>\$533,447,312</u>	<u>\$525,171,262</u>
Operating Profit . . . . .	\$ 50,709,985	\$ 46,725,756	\$ 37,280,377

**Non-operating section.** Non-operating income is the net income received from sources other than the sale of the company's products or services. It is generally in the form of interest and dividends on securities owned, rents, and royalties.

*Railroad.* The non-operating income of a railroad consists of rents, dividends, interest, and sometimes profits from non-transportation property. The Chesapeake & Ohio Railway reported the following non-operating income:

	1944	1943	1942
Other Income:			
Dividend Income . . . . .	\$ 989,141	\$ 849,084	\$ 677,993
Other Income . . . . .	978,224	1,046,360	1,138,116
	<u>\$1,967,365</u>	<u>\$1,895,444</u>	<u>\$1,816,109</u>

A more detailed statement of non-operating income was reported by Union Pacific Railroad in a recent year:

Income from oil operations in Southern California — net . . . . .	\$ 7,681,904
Dividend on stocks owned . . . . .	5,264,020
Interest on bonds, notes, and equipment trust certificates owned . . . . .	2,149,738
Income from unfunded securities and accounts . . . . .	1,805,198
Rent from lease of road and equipment . . . . .	172,243
Miscellaneous rents . . . . .	432,680
Miscellaneous income . . . . .	2,895,635
	<u>\$20,401,418</u>

*Public utility.* Hartford Electric Light Company reported non-operating income as:

	1944	1943	1942
Other Income . . . . .	\$145,969	\$156,536	\$159,561

*Industrial.* Other income as reported by National Dairy Products Corporation was:

	1944	1943	1942
Other Income . . . . .	\$1,718,465	\$1,311,023	\$1,305,767

Du Pont & Company, on the other hand, reported a much more detailed account of non-operating income. The following is from a recent report:

Other Income.			
Dividends from General Motors Corp. common stock . . . . .			\$30,000,000
Income from investment in controlled companies not wholly owned . . . . .			2,036,601
Miscellaneous other income — net . . . . .			4,528,214
			<u>\$36,564,815</u>
Less — provision for federal taxes on other income (allocated portion) . . . . .			4,290,000
			<u>\$32,274,815</u>

**Distribution of total income.** Total income is the aggregate of net operating income and net non-operating income. It is the amount of income available for the payment of fixed and other charges and for distribution to stockholders.

*Railroad.* Chesapeake & Ohio Railway reported income available for fixed charges as follows:

	1944	1943	1942
Net Railway Operating Income . . . . .	\$32,813,189	\$37,216,148	\$39,643,584
Other Income . . . . .	1,967,365	1,895,444	1,816,109
Total Income . . . . .	<u>\$34,780,554</u>	<u>\$39,111,592</u>	<u>\$41,459,693</u>
Miscellaneous Deductions . . . . .	323,774	353,281	248,189
Income Available — Fixed Charges . . . . .	<u>\$34,456,780</u>	<u>\$38,758,311</u>	<u>\$41,211,504</u>

Since 1935, under Interstate Commerce Commission regulations, “miscellaneous deductions from income” has included miscellaneous rents and certain miscellaneous tax accruals not chargeable to railway operations.

*Public utility.* The income available for fixed charges was reported by Hartford Electric Light Company as:

	1944	1943	1942
Operating Income . . . . .	\$2,478,643	\$2,474,026	\$2,295,670
Other Income . . . . .	145,969	156,536	159,561
Gross Corporate Income . . . . .	<u>\$2,624,612</u>	<u>\$2,630,562</u>	<u>\$2,455,231</u>

Deductions from "other income" where necessary should include miscellaneous amortization, income deductions and charges, and interest charged to construction.

*Industrial.* National Dairy Products Corporation reported the following income available for fixed charges:

	1944	1943	1942
Operating Profit . . . . .	\$50,709,985	\$46,725,756	\$37,280,377
Other Income . . . . .	1,718,465	1,311,023	1,305,767
	<u>\$52,428,450</u>	<u>\$48,036,779</u>	<u>\$38,586,144</u>
Less:			
Misc. Deductions . . . . .	\$ 4,311,422	\$ 1,566,559	\$ 2,008,364
Provision for Contingencies . . . . .		2,500,000	3,900,000
	<u>\$ 4,311,422</u>	<u>\$ 4,066,559</u>	<u>\$ 5,908,364</u>
Available for fixed charges . . . . .	\$48,117,028	\$43,970,220	\$32,677,780

The miscellaneous deductions included:

	1944	1943	1942
Cost of past service retirement annuities . . . . .	\$1,710,813	\$ 538,970	\$ 416,153
Net loss on disposition of capital assets . . . . .	2,268,725	231,738	1,123,158
Miscellaneous charges . . . . .	331,884	795,851	469,053
	<u>\$4,311,422</u>	<u>\$1,566,559</u>	<u>\$2,008,364</u>

The cost of past service retirement annuities referred to the purchase by the company of all past service retirement annuities for employees eligible under the company's retirement annuity plan. The company completed this program in 1944 by the payment of \$3,140,000, of which \$1,710,813 was charged to profit and loss and of which \$1,429,187 was deferred. The amount deferred was the estimated federal tax income benefits which the company expected to derive in the future as the result of amortizing the payments for past service annuities in accordance with the federal income tax laws and regulations. The company planned to write off this amount over a period not to exceed seven years by annual charges to profit and loss in amounts at least equal to the savings in federal taxes. It was anticipated that those savings would arise from the allowance of the amortized amount applicable to each of such years as a deduction from gross income for federal income tax purposes. Provision for contingencies represented provision for possible future inventory adjustments and other contingencies.

**Fixed charges.** Fixed charges include financial charges which must be paid before earnings can be distributed to stockholders as dividends. They include interest on funded and unfunded debt and amortization of bond discount. Amortization of bond discount

is the annual charge by which the discount on bonds issued below par is gradually written off during the life of the bond. Since it is in the nature of additional interest, it is considered a fixed charge.

*Railroad.* The usual fixed charges of a railroad consist of interest on funded and unfunded debt, amortization of discount on funded debt, and rent for leased road and miscellaneous properties. Rent for leased road is usually in the form of guaranteed interest and dividends on the securities of the leased road. Such payment represents to the lessor money which it would have had to pay out in interest and dividends on security issues of its own and hence is classed with interest as a fixed charge. The Pennsylvania Railroad operates approximately 10,132 miles of track of which the company owns only 2,866 miles, or 28.2 per cent, while the balance consists of about 6,813 miles operated under lease (67.2 per cent) and 453 miles operated under trackage rights (4.6 per cent).

The fixed charges reported by Chesapeake & Ohio Railway were as follows:

	1944	1943	1942
Rent for Leased Road . . . . .	\$ 49,691	\$ 49,669	\$ 49,563
Interest on Debt . . . . .	<u>7,066,093</u>	<u>7,349,962</u>	<u>8,008,505</u>
	\$7,115,784	\$7,399,631	\$8,058,068

In contrast with the Chesapeake & Ohio Railway, rent for leased roads and equipment is a major fixed charge to the Pennsylvania Railroad. Fixed charges as recently reported by the latter company were:

Rent for leased roads and equipment . . . . .	\$48,783,668
Miscellaneous rents . . . . .	415,952
Miscellaneous tax accruals . . . . .	239,963
Interest on funded debt . . . . .	26,497,330
Interest on unfunded debt . . . . .	258,812
Miscellaneous . . . . .	970,360
Sinking and reserve funds — accretions . . . . .	6,358,199
Total . . . . .	<u>\$83,524,284</u>

*Public utility.* Hartford Electric Light Company reported the following fixed charges:

	1944	1943	1942
Interest on borrowed money, etc. . . . .	\$264,748	\$245,045	\$273,235
Depreciation — interest accrual . . . . .	<u>304,759</u>	<u>284,995</u>	<u>109,877</u>
Total . . . . .	\$569,507	\$530,040	\$383,112

The “depreciation — interest accrual” charge is the equivalent of interest at 3 per cent on the existing reserve. The company treats money borrowed from the reserve on the same basis as money obtained by the issue of bonds.

*Industrial.* The fixed charges of National Dairy Products Corporation were:

	1944	1943	1942
Interest on Funded Debt . . . . .	\$1,798,740	\$1,921,409	\$1,955,928

Though the annual sinking fund charge under a bond indenture is a capital charge, some industrial bond indentures require that the fund be created out of earnings, in which case it becomes a fixed charge.

**Net income.** Net income is the amount available for distribution to the stockholders.

*Railroad.* Chesapeake & Ohio Railway reported the following net income:

	1944	1943	1942
Income available for fixed charges . . .	\$34,456,780	\$38,758,311	\$41,211,504
Fixed charges:			
Rent for leased roads and equipment . .	49,691	49,669	49,563
Interest on debt . . . . .	7,066,093	7,349,962	8,008,505
Net income . . . . .	\$27,340,995	\$31,358,680	\$33,153,436
Disposition of net income:			
Income applied to sinking and other reserve funds . . . . .	501,715	506,548	512,086
Income balance transferred to profit and loss . . . . .	\$26,839,280	\$30,852,132	\$32,641,350

Not all of the \$27,340,995 of net income in 1944 was available for the stockholders, however, since \$501,715 of it was applied to sinking and other funds. As a result the net income available was \$26,839,280.

*Public utility.* The net income as reported by Hartford Electric Light Company was as follows:

	1944	1943	1942
Available for fixed charges . . . . .	\$2,624,612	\$2,630,561	\$2,455,231
Fixed charges . . . . .	569,507	530,040	383,112
Net income . . . . .	\$2,055,105	\$2,100,521	\$2,072,119

*Industrial.* Under the corporate income tax and excess profits tax, the federal government is regarded as sharing in the profits of industrial companies. Net income, therefore, is usually shown before and after provisions for federal taxes. The net income of National Dairy Products Corporation was reported as follows:

	1944	1943	1942
Net income before taxes . . . . .	\$46,318,288	\$42,048,811	\$30,721,852
Provision for federal taxes:			
Normal income and surtax . . . . .	6,720,000	7,400,000	10,400,000
Excess profits tax (less credit for debt retirement) . . . . .	26,360,000	21,600,000	8,100,000
Net income after taxes . . . . .	\$13,238,288	\$13,048,811	\$12,221,852



The provision for federal taxes was estimated as follows:

	1944	1943
Normal tax and surtax . . . . .	\$6,720,000	\$7,400,000
Excess profits tax . . . . .	\$29,200,000	\$24,000,000
Less: debt retirement credit . . . . .	2,840,000	2,400,000
	<u>\$26,360,000</u>	<u>\$21,600,000</u>
Amount reported as current liability . . . . .	\$33,080,000	\$29,000,000
Less: post-war excess profits tax refund . . . . .	80,000	nil
Amount charged to profit and loss . . . . .	<u>\$33,000,000</u>	<u>\$29,000,000</u>

### Review Questions

1. Define an income statement.
2. Name the divisions of an income statement.
3. Discuss the relation of the income statement to the balance sheet.
4. Discuss the significance of the income statement to the investor.
5. Compare the form of income statement as issued by a railroad, a public utility, and an industrial company.
6. Name the important items in the operating section.
7. Discuss the nature of operating income as reported by a railroad, a public utility, and an industrial company.
8. Indicate the nature of the operating expenses of a railroad, a public utility, and an industrial company.
9. Distinguish between net operating revenue, operating income, and net operating income of a railroad.
10. Indicate the calculation and significance of net operating income in a public utility and net operating profit in an industrial company.
11. Discuss the nature of non-operating income of a railroad, a public utility, and an industrial company.
12. Indicate the sources of the income available for fixed charges.
13. Define and indicate the nature of fixed charges in a railroad, a public utility, and an industrial company.
14. Define and indicate the calculation of net income in a railroad, a public utility, and an industrial company.

### Assignment

(a) Construct the income statement from the following data:

<b>(1) RAILROAD</b>	
Hire of Equipment — Debit Balance . . . . .	\$ 10,328,000
Taxes . . . . .	61,744,000
Operating Revenues . . . . .	353,065,000
Joint Facility Rents — Debit Balance . . . . .	928,000
Non-operating Income . . . . .	15,799,000
Fixed Charges . . . . .	14,740,000
Operating Expenses . . . . .	219,039,000
<b>(2) PUBLIC UTILITY</b>	
Fixed Charges . . . . .	\$ 13,139,000
Operating Revenues . . . . .	180,858,000
Miscellaneous Operating Expenses . . . . .	72,864,000
Maintenance . . . . .	9,353,000
Non-operating Income . . . . .	724,000
Taxes . . . . .	40,927,000
Depreciation . . . . .	22,906,000

## (3) INDUSTRIAL

Depreciation . . . . .	\$ 6,433,000
Other Income . . . . .	1,167,000
Maintenance . . . . .	900,000
Net Sales . . . . .	371,867,000
Provision for Federal Taxes . . . . .	16,718,000
Fixed Charges . . . . .	259,000
Provision for Contingencies . . . . .	5,000,000
Miscellaneous Operating Expenses . . . . .	334,308,000

(b) In a railroad income statement determine operating revenues from the following data:

Hire of Equipment — Debit Balance . . . . .	\$ 15,000,000
Taxes . . . . .	72,000,000
Joint Facility Rents — Debit Balance . . . . .	2,000,000
Operating Expenses . . . . .	250,000,000
Net Operating Income . . . . .	111,000,000

(c) In a public utility income statement, determine total income from the following data.

Miscellaneous Operating Expenses . . . . .	\$ 90,000,000
Taxes . . . . .	48,000,000
Operating Revenue . . . . .	250,000,000
Maintenance . . . . .	12,000,000
Non-operating Income . . . . .	50,000,000
Depreciation . . . . .	30,000,000

(d) In an industrial income statement, determine net income from the following data:

Operating Expenses . . . . .	\$380,000,000
Provision for Contingencies . . . . .	8,000,000
Net Sales . . . . .	450,000,000
Other Income . . . . .	20,000,000
Provision for Federal Taxes . . . . .	22,000,000
Fixed Charges . . . . .	9,000,000

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## CHAPTER FOURTEEN

### THE BALANCE SHEET

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**Introduction.** The balance sheet is a financial statement showing the condition of the business as of a specified date, usually the close of the fiscal year. It states the assets, the liabilities, and the net worth of the company. The statement of assets indicates both the forms in which the capital has been invested and the amount of capital invested in each form. The capital is usually invested in three general forms: in working capital, as evidenced by the current assets; in fixed capital, as shown by land, plant, and equipment and by security investments; and in miscellaneous capital investments, as revealed by deferred assets, intangible assets, and sinking funds. The statement of liabilities and net worth, on the other hand, shows both the sources from which the capital has been derived and the amount of capital derived from each source. The capital is usually obtained from creditors, as evidenced by current liabilities and funded debt, and from owners, as revealed in the capital stock, reserves, and surplus accounts.

The balance sheet is significant to the investor as a basis of determining (a) the amount of capital invested in the business, (b) the working-capital position of the company, (c) the capital structure, (d) the assets that provide income, and (e) the adequacy of reported earnings.

#### CHESAPEAKE & OHIO RAILWAY

BALANCE SHEET, DECEMBER 31, 1944

##### *Assets*

##### Investments:

##### Road and Equipment — Property:

Road . . . . .	\$379,714,301
Equipment . . . . .	255,120,482
General Expenditures . . . . .	3,515,674
	<hr/>
	\$638,350,457

Improvements on Leased Property . . . . .	\$ 255,333
Acquisition Adjustment — Cr . . . . .	259,471
Donations and Grants — Cr . . . . .	2,864,208
Investment in Transportation Property . . . . .	<u>\$635,482,111</u>
Sinking Funds . . . . .	\$ 587,317
Special Reserve Funds . . . . .	8,219,629
Deposits in lieu of Mortgaged Property Sold . . . . .	816,989
Miscellaneous Physical Property . . . . .	5,986,608
Investments in Affiliated Companies:	
Stocks . . . . .	46,035,948
Bonds . . . . .	2,377,770
Notes . . . . .	11,550,000
Advances . . . . .	4,336,024
Other Investments:	
Stocks . . . . .	26,520,668
Bonds . . . . .	481,126
Notes . . . . .	96,402
Advances . . . . .	21,043
	<u>\$107,029,524</u>
Less — Held by or for Company . . . . .	319,000
	<u>\$106,710,524</u>
Less — Reserve for Adjustment of Investment in Securities . . . . .	9,441,168
	<u>\$ 97,269,356</u>
Current Assets:	
Cash in Treasury . . . . .	\$ 24,480,826
Cash in Transit . . . . .	1,028,949
Temporary Cash Investments:	
U. S. Treasury Notes — Savings Series C-1947 . . . . .	11,000,000
U. S. Treasury 1½% Notes — Series B-1947 . . . . .	7,300,000
Special Deposits . . . . .	13,026,547
Loans and Bills Receivable . . . . .	89,169
Net Balance Receivable from Agents and Conductors . . . . .	1,894,415
Miscellaneous Accounts Receivable . . . . .	4,940,856
Materials and Supplies . . . . .	8,993,907
Interest and Dividends Receivable . . . . .	233,407
Rents Receivable . . . . .	58,031
Other Current Assets . . . . .	2,192,136
Total Current Assets . . . . .	<u>\$ 75,238,242</u>
Deferred Assets:	
Working Fund Advances . . . . .	31,924
Other Deferred Assets . . . . .	919,240
Total Deferred Assets . . . . .	<u>\$ 951,164</u>
Unadjusted Debits:	
Rents and Insurance Premiums Paid in Advance . . . . .	\$ 66,644
Discount on Funded Debt . . . . .	30,616
Other Unadjusted Debits . . . . .	5,023,629
Securities Issued or Assumed:	
Common Capital Stock (Contra) — Unpledged . . . . .	25
Refunding & Improvement 3½% Mortgage Bonds Series D (Contra) — Unpledged . . . . .	138,000
Refunding & Improvement 3½% Mortgage Bonds Series E (Contra) — Unpledged . . . . .	208,000
General Mortgage 4½% Bonds (Contra) — Unpledged . . . . .	30,000,000
	<u>\$ 35,466,914</u>
Less — Held by or for Company (Contra) . . . . .	30,346,025
Total Unadjusted Debits . . . . .	<u>\$ 5,120,889</u>
Total Assets . . . . .	<u>\$814,061,762</u>

# THE BALANCE SHEET

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## Liabilities

### Stock:

Common (7,657,355 shares, Par Value \$25) . . . . .	\$191,433,944
Less — Held by or for Company at Date (Common) . . . . .	25
Total Stock Outstanding with Public . . . . .	<u>\$191,433,919</u>
Premium on Capital Stock . . . . .	2,301,093
Total Stock . . . . .	<u>\$193,735,012</u>

### Funded Debt:

First Mortgage, Paint Creek Branch, 4% . . . . .	1945	539,000
First Mortgage, Coal River Railway Company, 4% Bonds . . . . .	1945	2,206,000
First Mortgage, Potts Creek Branch, 4% . . . . .	1946	600,000
First Mortgage, Kanawha Bridge & Terminal Company, 5% . . . . .	1948	283,000
Extended First Mortgage, Columbus & Hocking Valley RR Co., 4% . . . . .	1948	1,401,000
Extended First Mortgage, Columbus & Toledo R.R. Co., 4% . . . . .	1955	2,441,000
Extended First Mortgage, Greenbrier R'y Co., 3½% . . . . .	1992	604,000
First Mortgage, R. & A. Division, 4% . . . . .	1989	6,000,000
Second Mortgage, R. & A. Division, 4% . . . . .	1989	998,000
General Mortgage, 4½% . . . . .	1992	80,204,000
Refunding and Improvement Mortgage, 3½% Series D . . . . .	1996	37,754,000
Refunding and Improvement Mortgage, 3½% Series E . . . . .	1996	27,803,000
Refunding and Improvement Mortgage, Series G-1 to G-25 . . . . .	1966	20,660,000
First Consolidated Mortgage, 4½%, Hocking Valley Railway Company . . . . .	1999	15,854,000
Equipment Trust Obligations . . . . .		44,626,000
Miscellaneous Obligations . . . . .	1946	<u>3,060,000</u>
		\$245,033,000
Less — Held by or for Company (Contra) . . . . .		<u>30,665,000</u>
Total Funded Debt Outstanding . . . . .		<u>\$214,368,000</u>

### Current Liabilities:

Traffic and Car — Service Balances — Cr. . . . .	1,645,281
Audited Accounts and Wages Payable . . . . .	9,115,829
Miscellaneous Accounts Payable . . . . .	810,926
Interest Matured Unpaid . . . . .	652,328
Dividends Matured Unpaid . . . . .	5,821,219
Unmatured Interest Accrued . . . . .	1,897,409
Unmatured Rents Accrued . . . . .	399,963
Accrued Tax Liability . . . . .	49,719,521
Other Current Liabilities . . . . .	<u>574,845</u>
Total Current Liabilities . . . . .	<u>\$ 70,637,322</u>

### Deferred Liabilities

#### Unadjusted Credits:

Premium on Funded Debt . . . . .	\$ 32,629
Accrued Amortization of Defense Projects — Road . . . . .	1,248,757
Accrued Depreciation — Equipment . . . . .	138,913,526
Accrued Amortization of Defense Projects — Equipment . . . . .	14,393,441
Accrued Depreciation — Miscellaneous Physical Property . . . . .	1,032,046
Other Unadjusted Credits . . . . .	6,743,339
Accrued Depreciation — Leased Property . . . . .	<u>29,980</u>
Total Unadjusted Credits . . . . .	<u>\$162,393,717</u>

### Surplus:

Unearned Surplus . . . . .	\$ 281,135
Earned Surplus — Appropriated . . . . .	16,430,545
Earned Surplus — Unappropriated . . . . .	<u>153,142,253</u>
	<u>\$169,853,933</u>

### Total

\$814,061,762

**Working capital: current assets.** Current assets are those assets which in the normal course of business operations provide the means of meeting the claims of current creditors. They include cash, marketable securities, receivables, and inventory. The form in which working capital is invested is continually changing. At one time it is invested in a stock of goods (inventory), and when the inventory is sold the working capital is transferred from inventory to receivables. As the receivables are liquidated the working capital is again transformed into cash and is available again for operating purposes. Companies that finance their seasonal peaks out of current funds sometimes find employment for the surplus cash during slow periods in the purchase of highly marketable securities. The extent to which working capital is distributed among cash, marketable securities, receivables, and inventory varies according to the character of the business.

**Railroad.** Railroads sell a service instead of a product and sell largely on a cash basis. Since they do not face the problem of financing inventory or receivables, their chief current assets are cash and security investments. Chesapeake & Ohio Railway, for example, reported the following current assets:

	1944	1943	1942
Cash in Treasury . . . . .	\$24,480,826	\$26,443,122	\$27,143,338
Cash in Transit . . . . .	1,028,949	933,924	845,834
Temporary Cash Investments:			
U. S. Treasury Notes — Tax Series B-1943 . . . . .			600,000
U. S. Treasury Notes — Tax Series B-1944 . . . . .		15,000,000	4,000,000
U. S. Treasury Notes — Savings Series C-1947 . . . . .	11,000,000		
U. S. Treasury 1½% Notes — Series B-1947 . . . . .	7,300,000		
U. S. Treasury 1½% Notes — Series A-1943 . . . . .			8,234,656
U. S. Treasury 1½% Notes — Series B-1943 . . . . .			8,075,000
U. S. Treasury 1% Notes — Series C-1943 . . . . .			5,025,469
U. S. Treasury ⅞% Cert. of Indebt. — Series E-1943 . . . . .			2,200,000
U. S. Treasury ¾% Notes — Series A-1944 . . . . .		5,021,875	
U. S. Treasury 1% Notes — Series B-1944 . . . . .		5,026,563	
Other Temporary Cash Investments . . . . .			1,988,074
Special Deposits (to pay interest, dividends, matured funded debt, etc.) . . . . .	13,026,547	8,556,647	7,709,775
Loans and Bills Receivable . . . . .	89,169	118,411	121,015
Traffic and Car Service Balances — Dr. . . . .			4,339,446
Net Balance Receivable from Agents and Conductors . . . . .	1,894,415	2,411,457	1,267,670
Miscellaneous Accounts Receivable . . . . .	4,940,856	8,055,282	5,323,698
Materials and Supplies . . . . .	8,993,907	7,007,898	6,829,579
Interest and Dividends Receivable . . . . .	233,407	223,000	215,018
Rents Receivable . . . . .	58,031	44,398	37,410
Other Current Assets . . . . .	2,192,136	3,021,963	14,327
Total Current Assets . . . . .	\$75,238,242	\$81,864,540	\$83,970,309

Cash of \$25,509,775 in 1944 represented 33.9 per cent, and temporary cash investments of \$18,300,000 amounted to 24.3 per cent of total current assets. The two items aggregated \$43,809,775 and accounted for 58.2 per cent of the total current assets.

*Public utility.* Public utility operating companies are in a position similar to railroads in that they sell a service, and primarily on a cash basis. For example, Hartford Electric Light Company reported the following current assets:

	1944	1943	1942
Cash . . . . .	\$1,121,330	\$1,007,447	\$ 850,873
Notes and Accounts Receivable . . . . .	1,006,369	889,580	919,535
Materials and Supplies . . . . .	2,036,596	2,035,195	1,865,541
Other Current and Accrued Assets . . . . .	107,872	140,605	142,692
Total Current Assets . . . . .	<u>\$4,272,167</u>	<u>\$4,072,827</u>	<u>\$3,778,641</u>

Materials and supplies account was the largest single item, averaging 48.4 per cent of the total current assets.

#### HARTFORD ELECTRIC LIGHT COMPANY

BALANCE SHEET, DECEMBER 31, 1944

<i>Assets</i>	
Utility Plant . . . . .	<u>\$38,263,613</u>
Investment and Fund Accounts:	
Connecticut Power Co Stock <sup>a</sup> . . . . .	\$ 2,038,065
Other Investments . . . . .	181,812
Hartford Electric Light Co. Common Stock (Shares held for future sale to employees) <sup>b</sup> . . . . .	117,026
Total Investment and Fund Accounts . . . . .	<u>\$ 2,336,903</u>
Current and Accrued Assets:	
Cash (Tax Notes \$500,000) . . . . .	\$ 1,121,330
Notes and Accounts Receivable . . . . .	1,006,369
Materials and Supplies . . . . .	2,036,596
Other Current and Accrued Assets . . . . .	107,872
Total Current and Accrued Assets . . . . .	<u>\$ 4,272,167</u>
Deferred Debits:	
Work in Progress . . . . .	\$ 21,152
Other Deferred Debits . . . . .	233,980
Total Deferred Debits . . . . .	<u>\$ 255,132</u>
Total Assets and Other Debits . . . . .	<u>\$45,127,815</u>

#### *Liabilities*

Capital Stock:	
Common Capital Stock (840,000 Shares par \$25) . . . . .	<u>\$21,000,000</u>
Long Term Debt:	
Thirty-year 3% Debentures, 1937 Series, Due April 1, 1967 . . . . .	\$ 3,010,000
Thirty-year 3½% Debentures, 1941 Series, Due September 1, 1971 . . . . .	3,885,000
Total Long Term Debt . . . . .	<u>\$ 6,895,000</u>

<sup>a</sup> Number of shares held 60,919.

<sup>b</sup> Number of shares held 2,490

## Current and Accrued Liabilities:

Accounts Payable . . . . .	\$ 343,939
Customers' Deposits . . . . .	33,271
Accrued Taxes and Interest on Bonds, etc. . . . .	2,622,788
Other Current and Accrued Liabilities . . . . .	57,879
Total Current and Accrued Liabilities . . . . .	<u>\$ 3,057,877</u>
Deferred Credits . . . . .	164,290
Reserve for Depreciation of Utility Plant . . . . .	11,051,426
Contributions in Aid of Construction . . . . .	43,560
Earned Surplus . . . . .	2,915,662
Total Liabilities and Other Credits . . . . .	<u>\$45,127,815</u>

*Industrial.* Industrial companies, in contrast to railroad and public utility companies, sell a product rather than a service, and for this reason their current assets are marked by the importance of receivables and inventory. National Dairy Products Corporation, for example, reported the following current assets:

	1944	1943	1942
Cash . . . . .	\$26,920,548	\$18,569,660	\$17,027,644
U. S. Gov't Securities . . . . .	18,425,741	11,197,660	
Receivables:			
Notes Receivable . . . . .	*	291,156	489,915
Accounts Receivable . . . . .	*	25,516,790	25,780,451
	<u>\$26,874,682</u>	<u>\$25,807,946</u>	<u>\$26,270,366</u>
Less: Reserves for Doubtful Notes and			
Accounts . . . . .	3,293,973	2,935,042	2,442,185
	<u>\$23,580,709</u>	<u>\$22,872,904</u>	<u>\$23,828,181</u>
Inventories, at cost (generally average cost)			
or market, whichever is lower —			
Products and Materials . . . . .	37,089,533	42,909,674	42,437,807
Supplies . . . . .	7,782,758	9,341,969	7,972,098
	<u>\$44,872,291</u>	<u>\$52,251,643</u>	<u>\$50,409,905</u>
Cash Surrender Value of Life Insurance . . . . .			420,966
Total Current Assets . . . . .	<u>\$113,799,289</u>	<u>\$104,891,867</u>	<u>\$91,686,696</u>

\* Not reported separately.

Inventory of \$44,872,291 and receivables of \$23,580,709 in 1944 represented 39.4 per cent and 20.7 per cent, respectively, of total current assets.

## NATIONAL DAIRY PRODUCTS CORPORATION

## BALANCE SHEET, DECEMBER 31, 1944

## Assets

## Current Assets:

Cash . . . . .	\$26,920,548
U. S. Government Securities . . . . .	18,425,741
Notes and Accounts Receivable . . . . .	\$26,874,682
Less: Reserve for Bad Debts . . . . .	<u>3,293,973</u>
Inventories, at lower of average cost or market:	
Products and Materials . . . . .	37,089,533
Supplies . . . . .	<u>7,782,758</u>
Total Current Assets . . . . .	<u>\$113,799,289</u>



# THE BALANCE SHEET

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## Investments and Other Assets:

Foreign Subsidiaries:		
Canadian . . . . .	\$2,599,563	
English, Australian, and Argentine . . . . .	3,998,513	
Continental European . . . . .	1	
	<u>\$6,598,077</u>	
Less: Reserve for Investments . . . . .	3,503,935	
	<u>\$3,094,142</u>	
Domestic Subsidiaries, not consolidated . . . . .	824,772	
Miscellaneous Investments, Deposits and Receivables, less reserve . . . . .	2,715,073	\$ 6,633,987
Property, Plant and Equipment (Stated at cost or, as to certain properties, at sound values as appraised as of dates of acquisition, less certain adjustments):		
Land . . . . .	13,003,610	
Buildings, Machinery and Equipment . . . . .	127,888,420	
	<u>140,892,030</u>	
Less: Reserve for Depreciation . . . . .	55,918,403	84,973,627
Prepaid and Deferred Items . . . . .		2,605,783
Goodwill . . . . .		1
Total . . . . .		<u>\$208,012,687</u>

## Liabilities

Current Liabilities:		
Serial Debentures (*Paid January 15, 1945) . . . . .		\$ 1,500,000*
Accounts Payable . . . . .		20,909,369
Accrued Liabilities . . . . .		7,478,448
Provision for Federal Taxes on Income . . . . .	\$33,080,000	
Less: U. S. Treasury Savings Notes, Series C . . . . .	<u>33,080,000</u>	None
		<u>\$29,887,817</u>
Funded Debt:		
3½% Debentures due 1960 (semi-annual purchase fund requirements \$275,000 (minimum) through December 1, 1950, and \$825,000 thereafter through June 1, 1960)		51,700,000
Minority Interest in Subsidiaries . . . . .		345,308
Reserves for:		
Contingencies . . . . .	10,000,000	
Prior Years' Federal and State Taxes . . . . .	6,986,312	
Insurance . . . . .	546,797	
Other . . . . .	<u>83,762</u>	17,616,871
Capital Stock and Earned Surplus:		
Common Stock:		
Authorized — 8,000,000 shares without par value		
Issued — 6,255,247 shares at stated value . . . . .	51,266,676	
Earned Surplus . . . . .	<u>57,196,015</u>	108,462,691
Total . . . . .		<u>\$208,012,687</u>

In the 1942 and 1943 reports the company included in current assets "cash surrender value of life insurance," which represented insurance policies on the lives of officers taken out by the company to protect creditors. It is true, of course, that after the lapse of a certain number of years, those policies have a cash surrender value and as such they are an asset of the corporation. In view of the fact, however, that such policies do not become available

for the payment of current liabilities in the regular course of operations and, therefore, do not meet the definition of a current asset, they should be treated as non-current assets. In the instance of National Dairy Products Corporation in 1943 and in 1942, the "cash surrender value of life insurance" should be eliminated from the current asset account and stated separately as a miscellaneous asset. The total current assets, for analytical purposes, was \$104,891,867 in 1943 and \$91,265,730 in 1942. Current assets, in all cases, should be valued at cash or liquidating value.

**Fixed capital.** Fixed capital refers to the investment of capital in more or less permanent form — assets which are not bought for the purpose of resale — such as fixed assets and investments in subsidiary companies.

**Fixed assets.** Fixed assets consist of land, plant, machinery, and equipment.

**Railroad.** The "investment" account in a railroad balance sheet includes all the fixed, or capital, assets of the company, both operating and non-operating. The operating fixed assets consist of physical property directly owned and used for transportation services, such as road, equipment, and improvements on leased railway property. Chesapeake & Ohio Railway showed the following investment in operating property:

	1944	1943	1942
Road & Equipment — Property.			
Road . . . . .	\$379,714,801	\$375,232,280	\$371,346,444
Equipment . . . . .	255,120,482	236,059,311	226,216,510
General Expenditures . . . . .	3,515,674	3,527,227	3,530,271
	<u>\$638,350,457</u>	<u>\$614,818,818</u>	<u>\$601,093,225</u>
Improvements on Leased Property . . . . .	255,333	249,937	254,843
	<u>\$638,605,790</u>	<u>\$615,068,755</u>	<u>\$601,348,068</u>
Less:			
Acquisition Adjustment . . . . .	259,471	247,642	
Donations and Grants . . . . .	2,864,208	2,856,983	251,239
Total . . . . .	<u>\$635,482,111</u>	<u>\$611,964,130</u>	<u>\$601,096,829</u>

The item "equipment" represents the investment in equipment owned by the railroad and the railroad's equity in equipment which is pledged under an equipment trust issue. Some railroads report each type of investment in equipment separately. The New York Central Railroad in a recent year reported a total investment of \$434,803,653, of which \$312,706,392 represented owned equipment and \$122,097,261 the equity in equipment in trust.

The term "general expenditures" refers to expenditures for additions and betterments and road extensions during the year. The Chesapeake & Ohio Railway report "General Expenditures" as a

lump sum. Some companies, however, report the respective amounts applicable to road and to equipment. The Atchison, Topeka & Santa Fe Railway in a recent year reported the distribution of general expenditures as \$10,029,766 for road and \$17,360,932 for equipment.

The item "improvements on leased property" represents capital expenditures on other roads which the company leases under long-term contracts. Since the conditions of the lease make the leased property equivalent to owned property, the betterments and additions are considered as additions to the lessor road's property account. The Pennsylvania Railroad, in contrast to the Chesapeake & Ohio Railway, recently reported the breakdown of the "Improvements on Leased Property" account as:

Road . . . . .	\$136,647,216
Equipment . . . . .	5,448,096
General Expenditures . . . . .	2,789,618
	<u>\$144,884,930</u>

Obviously, the amount reported as "Improvements on Leased Property" tends to vary from road to road in accordance with the amount of property leased as evidenced in part by the income deduction "Rent for Leased Roads." In the instance of the Chesapeake & Ohio Railway in 1944, the asset account "Improvement on Leased Property" of \$255,333 compared with the income deduction "Rent for Leased Roads and Equipment" of \$49,691, whereas the Pennsylvania Railroad in the same year reported the asset "Improvements on Leased Property" of \$144,884,930 compared with the income deduction "Rent for Leased Roads and Equipment" of \$48,783,668.

The item "Grants in Aid of Construction" represents contributions by governmental agencies toward the cost of road and equipment property. Under those grants government traffic is carried at less than established commercial rates. By an order of the Interstate Commerce Commission effective January 1, 1943, such contributions are now treated as reductions in the cost of property as stated on the asset side of the balance sheet. In 1942 Chesapeake & Ohio Railway carried as a liability "Governmental Grants: Grants in Aid of Construction . . . \$251,239." In compliance with the Commission's order, the company in 1943 transferred the entire account from the liability side of the balance sheet to the asset side as a reduction of the January 1, 1943, balance in "Investment in Road and Equipment."

*Public utility.* The fixed assets of an operating public utility company consist primarily of the plant and equipment devoted to providing service. An electric utility plant may be either a hydro or a steam plant. A very large part of the electric energy produced in this country is generated by steam plants; more than twice as much was generated by steam than by hydro plants in 1944. A hydro plant utilizes water as its basic raw material, whereas a steam plant uses coal. The generating capacity of the Idaho Power Company, for example, is predominantly hydro, whereas Detroit Edison Company generates almost all of its electric requirements by steam.

Hartford Electric Light Company reported as follows:

	1944	1943	1942
Utility Plant . . .	\$38,263,613	\$38,445,705	\$37,845,650

The utility plant of this company consisted of two steam and one hydro-generating plants and a distribution system, which included 597 miles of overhead and 125 miles of underground lines and 22 major substations. Transmission lines are the wire circuits that carry power from the generating plants to the areas in which the power is to be distributed. The distribution lines consist of wire circuits that carry electric power, stepped down by transformers, from transmission lines to retail customers.\*

*Industrial.* The fixed assets of an industrial company consist of plant and equipment, as evidenced by the report of National Dairy Products Corporation:

	1944	1943	1942
Property, Plant & Equipment*			
Land . . . . .	\$ 13,003,610	\$ 14,102,671	\$ 14,630,083
Buildings, machinery, and equipment . . . . .	127,888,420	133,967,041	136,324,890
	<u>\$140,892,030</u>	<u>\$148,069,712</u>	<u>\$150,954,973</u>
Less: Reserves for Depreciation . . . . .	55,918,403	55,881,229	53,568,154
	<u>\$ 84,973,627</u>	<u>\$ 92,188,483</u>	<u>\$ 97,386,819</u>

\* Stated at cost, or as to certain properties at sound values as appraised as of dates of acquisition, plus additions at cost, less retirements and certain adjustments.

National Dairy Products Corporation in reporting fixed assets indicated the investment in land as distinguished from the investment in buildings, machinery, and equipment. On the other hand some companies, such as Goodyear Tire & Rubber Company, include land and buildings, machinery and equipment in one item. For example, the Goodyear Company has reported as follows:

Land, buildings, machinery and equipment, at cost . . . . .	\$215,907,984
Less: depreciation and amortization . . . . .	129,717,107
	<u>\$ 86,190,877</u>

**Investments.** Investments represent fixed capital that has been

in non-operating assets, usually in securities of subsidiary companies or other companies.

*Railroad.* The non-operating assets of a railroad consist primarily of miscellaneous physical property; stocks, bonds, and notes of or advances to affiliated companies; and other investments. The investment in miscellaneous physical property includes mines, hotels, commercial power plants, and real estate not used for transportation. Security investments represent mostly stocks of other railroads that have been purchased and are held either for traffic purposes, such as the interest of the Pennsylvania in the New Haven, of the Union Pacific in the Chicago & North Western, and of the Missouri Pacific in the Denver & Rio Grande Western, or for consolidation purposes, such as the Pennsylvania's interest in the Lehigh Valley and in the Wabash. The Pennsylvania Railroad owns some \$20,000,000 of common stock in the New York, New Haven & Hartford Railroad, and through the Pennsylvania Company (a wholly owned subsidiary) approximately \$31,000,000 of preferred A stock and \$36,000,000 of common stock in the Wabash Railway, and \$18,000,000 of common stock of the Lehigh Valley Railroad. The Chicago, Burlington & Quincy Railroad controls approximately 70 per cent of the outstanding stock of the Colorado & Southern system, with which it connects in Wyoming and at Denver. Through control of the 1,800-mile Colorado & Southern, the Burlington reaches the Gulf of Mexico at Galveston, touching Pueblo, Fort Worth, Dallas, and Houston en route.

The Chesapeake & Ohio Railway reported the following non-operating fixed assets:

	1944	1943	1942
Sinking Funds . . . . .	\$ 587,317	\$ 749,311	\$ 580,438
Special Reserve Funds . . . . .	8,219,629		
Deposits in lieu of Mortgaged Property Sold	816,989	941,969	831,255
Miscellaneous Physical Property . . . .	5,986,608	7,762,706	7,587,650
Investment in Affiliated Companies:			
Stocks . . . . .	46,035,948	46,019,828	46,019,828
Bonds . . . . .	2,377,770	2,287,662	3,941,752
Notes . . . . .	11,550,000	12,000,000	12,003,000
Advances . . . . .	4,336,024	2,608,521	2,697,946
Other Investments:			
Stocks . . . . .	26,520,668	25,285,910	22,789,928
Bonds . . . . .	481,126	1,629,417	2,629,417
Notes . . . . .	96,402	102,802	153,197
Advances . . . . .	21,043	20,949	20,750
	<u>\$107,029,524</u>	<u>\$99,409,075</u>	<u>\$99,255,161</u>
Less: Held by or for Company . . . .	319,000	409,000	409,000
Total Investments . . . . .	<u>\$106,710,524</u>	<u>\$99,000,076</u>	<u>\$98,846,151</u>
Less: Reserve for Adjustment of Investment in Securities . . . . .	9,441,168	9,441,351	9,441,351
	<u>\$ 97,269,356</u>	<u>\$89,558,725</u>	<u>\$89,404,810</u>

The security investments of the Chesapeake & Ohio Railway in 1944 consisted of \$64,299,742 in affiliated companies and \$27,119,239 in other investments. The chief form of investment was in stocks aggregating \$72,556,615, the greater part of which was in affiliated companies. The balance of the security investments were in notes (\$11,646,402), advances (\$4,357,067), and bonds (\$2,858,896). The security investments included investments in other carriers directly connected with the company's operations and carried at a book value of \$14,505,095, and also investments in non-carrier companies at a book value of \$10,331,089. The most important of the latter companies were Western Pocahontas Corporation and Western Pocahontas Fuel Company, both of which companies owned coal lands located on Chesapeake & Ohio Railway lines. The Chesapeake & Ohio Railway in 1944 owned 69 per cent of the common stock of Pere Marquette Railway and 57 per cent of the common stock of the New York, Chicago & St. Louis Railroad (Nickel Plate). The combined holdings of Chesapeake & Ohio Railway and the Nickel Plate in certificates of deposit for capital stocks of the Wheeling & Lake Erie Railway represented 67 per cent of all the outstanding stock of the last-named railroad.

*Public utility.* The investments of a public utility operating company are usually in the securities of subsidiary companies. Hartford Electric Light Company, for example, reported as follows:

	1944	1943	1942
Connecticut Power Co. Stock . . . . .	\$2,038,065	\$2,038,064	\$2,038,064
Other Investments . . . . .	181,812	165,071	164,878
Hartford Electric Light Co. Common Stock (shares held for future sale to employees — 2,490) . . . . .	117,026	117,026	117,026
	<u>\$2,336,903</u>	<u>\$2,320,161</u>	<u>\$2,319,918</u>

The investment in Connecticut Power Company consisted of 60,919 shares of stock. The 2,490 shares of the common stock of Hartford Electric Light Company held by the company, however, was really treasury stock: A corporation cannot be considered to own values in its own securities, since they are an interest in itself. For analytical purposes, treasury stock should be regarded as a deduction from the amount of capital stock outstanding on the liability side of the balance sheet rather than as an asset. The Securities and Exchange Commission has ruled (Regulation S-X, Rule 3.16) that "Reacquired shares, if significant in amount, shall be shown separately as a deduction from capital shares, or from the total of capital shares and surplus, or from surplus, at either par or stated

value, or cash, as circumstances require." The total investments of Hartford Electric Light Company in 1944 were \$2,219,877 (\$2,336,903 — \$117,026), \$2,203,135 in 1943, and \$2,202,892 in 1942.

*Industrial.* Similarly, the investments of an industrial company are usually in the securities of subsidiary companies. National Dairy Products Corporation, for example, reported:

	1944	1943	1942
Investments in and advances to Canadian subsidiaries . . . . .	\$2,599,563	\$2,593,902	\$2,854,174
English, Argentine, and Australian subsidiaries . . . . .	3,998,513	4,006,392	4,315,393
Continental European subsidiaries . . . . .	1	1	1
	<u>\$6,598,077</u>	<u>\$6,600,295</u>	<u>\$7,169,568</u>
Less: Reserve for foreign investments and advances . . . . .	3,503,935	3,060,983	2,739,633
	<u>\$3,094,142</u>	<u>\$3,539,312</u>	<u>\$4,429,935</u>

The company segregated its investments, reporting them geographically as \$3,998,513 in English, Argentine, and Australian subsidiaries and \$2,599,563 in Canadian subsidiaries. As a result of war conditions, the company placed an extremely nominal value on its investments in Continental European subsidiaries.

While investments by railroad and public utility companies are usually in domestic subsidiaries, it is not uncommon for industrial companies with world-wide markets to have substantial investments in foreign subsidiaries. General Electric Company, directly or through subsidiaries, holds substantial interests in other large American and foreign electrical manufacturers and in important foreign utility companies. Activities in other countries, except Canada, are conducted principally by International General Electric Company, a wholly owned subsidiary, which has manufacturing or selling subsidiaries in practically every foreign market having trade relations with the United States. Canadian business is handled by Canadian General Electric Company. International Harvester Company owns plants and sales agencies in many foreign countries. Prior to the outbreak of war in 1939, foreign business accounted for a substantial part of the company's total revenues.

Fixed capital assets — fixed assets and investments — should be valued at original cost less depreciation.

**Miscellaneous assets.** Miscellaneous assets represent those assets which cannot be properly classed as current or fixed assets. They consist primarily of deferred assets, intangible assets, and sinking funds.

*Deferred assets.* Deferred assets comprise all expenditures the benefits of which are not entirely obtained in the period in which they are made but which, in the regular course of operations, will be charged as expenses of subsequent periods. The usual deferred assets are prepaid expenses, operating supplies, organization expense, bond discount, and miscellaneous deferred charges.

Prepaid expenses are those that have a definite life, fixed by trade custom or the specific terms of a contract, at the end of which period all benefits will have accrued. They include such prepaid expenses as rents, taxes, and insurance premiums. Those expenses are paid in advance and constitute a charge at the date of payment. The full benefit, however, will not have been obtained until the end of the period for which the payment was made.

Operating supplies are those that will be consumed and the benefits derived in the normal operation of the business. The period of consumption, however, is dependent upon the volume or kind of business done.

Organization expense is the cost of organizing a corporation. Inasmuch as such cost is met before any profits are available to offset them, they are shown for the initial period as an asset to prevent the appearance of a deficit in the balance sheet. It is customary, however, to write them off during the early years of the corporation's existence.

Bond discount arises out of the fact that the corporation has sold its bonds for less than par value. The full par value of the bonds must be paid to the bondholders at maturity. In the meantime the annual interest payments and the discount constitute the cost of borrowing. Since the bond discount cannot be regarded as a loss for the year in which the bonds were sold, the bonds are usually introduced into the balance sheet as a liability at par and the bond discount set up among the assets as a deferred charge. The bond discount is gradually written off over the life of the bond.

Miscellaneous deferred charges represent lump-sum expenditures made for the purpose of building up or increasing present or future income; the period of future benefit is solely a matter of judgment. These expenditures include such charges as advertising, cost of remodeling plants, or removal to new plants. Because the benefits of such expenditures will be enjoyed in future periods, the expense is set up as a deferred charge and written off over a period of time.

*Intangible assets.* The usual intangible assets are patents, copyrights, trade marks, franchise rights, and goodwill. A patent is the



exclusive right given by the federal government to the inventor to manufacture and sell the device covered by the patent for a period of seventeen years. A basic patent may be kept alive beyond the seventeen-year period by the discovery of important improvements, which may be patented. A patent may be considered to have value to a going concern only as it enables the company to earn more than the ordinary rate of return on the investment. A patent may become valueless before the expiration of the period, however, if superseded by subsequently patented improvements.

A copyright is the exclusive right granted to an author or his assignee by federal statutes to publish and print his literary or artistic work. It is granted for a period of twenty-eight years and may be renewed for an additional twenty-eight years upon application within one year of the expiration of the original copyright. The period during which the copyright has value to its owner, however, is usually less than its legal life.

Trade marks have value, because they become associated in the public mind with such merit as to enable the owner to obtain more than a normal rate of profit from the sale of the product. The cash value of a trade mark was illustrated in the lease under which International Shoe Company in 1931 leased the trade names "Dorothy Dodd" and "Queen Quality." In 1937 the company exercised the option to purchase those trade names at a reported price of \$100,000.

Goodwill is the intangible asset most frequently found in industrial balance sheets. Basically goodwill is the capitalized value of earning power in excess of the normal return on the net investment in tangible property. It is not usual, however, for a company to show an asset of goodwill unless it has purchased another company and has paid for the company's goodwill. When goodwill is purchased it is customary to carry it at its cost value. The cost of goodwill purchased in the past, however, has no current analytical significance. It is merely an historical record of a past transaction and in no way is related to current earnings.

The values given to intangibles by corporations vary considerably. Patents and franchises are given a value of \$1 by General Electric Company and of \$5 by Westinghouse Electric Corporation. American Tobacco Company places a value of \$54,000,000 on brands, trade marks, and goodwill, while Liggett & Myers Tobacco Company places a value of only \$1 on them. The value of intangible assets is fundamentally a matter of opinion. Basically their value

depends upon earnings, but accountancy provides no method of adjusting the valuation of intangibles in accordance with changes in earnings. For practical purposes, the investor disregards intangible assets in the analysis of financial statements by deducting them from the assets and from the net worth.

*Sinking fund.* A sinking fund consists of cash or securities that have been segregated to meet a fixed obligation. If the fund has been established under an agreement in a bond indenture, as is usually the case, it is not available for the payment of liabilities other than the bond issue for which it was established. Though usually classed among the miscellaneous assets, under certain circumstances it may be classed as a current asset. If, for example, the bond issue or a portion of it will become payable during the current period and the amount payable is included in the current liabilities, then the sinking fund or the required portion necessary to meet the current liability should be transferred to the current assets. In like fashion, if the fund includes deposits to be used for the payment of current interest, such deposits should be shown in the current assets.

Under current federal tax provisions, a frequently reported miscellaneous asset is "Post War Refund of Excess Profits Taxes."

*Railroad.* The miscellaneous assets reported by a railroad usually include deferred assets and unadjusted debits. The deferred assets consist of working funds that represent insurance funds, advances made to officers and employees, to be accounted for as expenditures are made, and other funds. Unadjusted debits are miscellaneous items which, for the most part, are very minor amounts and include prepaid expenses, discount on stocks and bonds issued, suspense items to be added later to some asset, or expense and contingent assets. The miscellaneous assets reported by Chesapeake & Ohio Railway were:

	1944	1943	1942
Deferred Assets:			
Working Fund Advances . . . . .	\$ 31,924	\$ 27,087	\$ 26,751
Other Deferred Assets . . . . .	919,240	544,517	551,942
Total Deferred Assets . . . . .	\$951,164	\$571,604	\$578,693
Unadjusted Debits:			
Rents and Insurance			
Premiums Paid in Advance . . . . .	66,644	92,756	77,640
Discount on Funded Debt . . . . .	30,616	37,943	
Other Unadjusted Debits . . . . .	5,023,629	4,256,403	5,025,675
Securities Issued or Assumed:			
Common Capital Stock (Contra) —			
Unpledged . . . . .	25	25	25

Refunding & Improvement 4½% Mortgage Bonds Series C (Contra) — Unpledged . . . . .			\$18,152,000
Refunding & Improvement 3½% Mortgage Bonds Series D (Contra) — Unpledged . . . . .	\$ 138,000	\$ 130,000	131,000
Refunding & Improvement 3½% Mortgage Bonds Series E (Contra) — Unpledged . . . . .	208,000	133,000	134,000
General Mortgage, 4½% Bonds (Contra) — unpledged . . . . .	30,000,000	30,000,000	30,000,000
	\$35,466,914	\$34,650,127	\$53,520,340
Less: Held by or for Company (Contra)	30,346,025	30,263,025	48,417,025
Total Unadjusted Debits . . . . .	\$ 5,120,889	\$ 4,387,102	\$ 5,103,315

*Public utility.* The miscellaneous assets of a public utility company generally consist of deferred debits. Hartford Electric Light Company reported the following miscellaneous assets:

	1944	1943	1942
Deferred Debits:			
Work in Progress . . . . .	\$ 21,152	\$ 5,149	\$ 96,474
Other Deferred Debits . . . . .	233,980	66,237	160,953
	<u>\$255,132</u>	<u>\$71,386</u>	<u>\$257,427</u>

Work in progress represents the practice in public utility companies of carrying forward, at the close of the year, expenditures on uncompleted projects and of showing the total cost of uncompleted plant additions as construction work in progress.

*Industrial.* The miscellaneous assets of an industrial company appear under many headings. Those reported by National Dairy Products Corporation were as follows:

	1944	1943	1942
Investments and Other Assets:			
Domestic Subsidiaries, not consolidated	\$ 824,772	\$ 20,272	\$ 191,272
Miscellaneous Investments, Deposits, and Receivables, less reserve . . . . .	2,715,073	3,067,514	3,531,871
Loans to Employees, less reserve . . . . .		169,692	258,236
Prepaid and Deferred Items . . . . .	2,605,783	2,021,520	1,051,138
Goodwill . . . . .	1	1	22,059,854
	<u>\$6,145,629</u>	<u>\$5,278,999</u>	<u>\$27,092,371</u>

For analytical purposes, the item of goodwill, if substantial in amount, should be eliminated from the balance sheet. National Dairy Products Corporation reported goodwill at \$22,059,854 in 1942 but wrote it down to \$1 in 1943 by a charge of \$19,829,515 to earned surplus and of \$2,230,338 to capital surplus. Cash surrender value of insurance, reported by the same company as a current asset, should be included in miscellaneous assets. As a

result of those adjustments, the total miscellaneous assets aggregated \$5,453,483 in 1942.

**Current liabilities.** Current liabilities represent creditors' claims that will mature within twelve months from the date of the balance sheet and for which no special provision for liquidation has been made. Current liabilities include notes and accounts payable and accruals.

*Railroad.* The current liabilities of a railroad consist primarily of taxes and accounts and wages payable. The Chesapeake & Ohio Railway, for example, reported the following current liabilities:

	1944	1943	1942
Traffic and Car-service Balances — Cr. . .	\$ 1,645,281	\$ 312,898	
Audited Accounts and Wages Payable . .	9,115,829	9,937,247	8,416,900
Miscellaneous Accounts Payable . . . .	810,926	748,142	705,099
Interest Matured Unpaid . . . . .	652,328	630,962	611,785
Dividends Matured Unpaid . . . . .	5,821,219	5,806,332	5,937,967
Unmatured Interest Accrued . . . . .	1,897,409	1,847,841	1,910,111
Unmatured Rents Accrued . . . . .	399,963	374,455	255,185
Accrued Tax Liability . . . . .	49,719,521	55,118,276	44,121,064
Other Current Liabilities . . . . .	574,845	4,341,155	332,405
	<u>\$70,637,322</u>	<u>\$79,117,308</u>	<u>\$62,290,516</u>

Tax liability was carried as an unadjusted credit prior to 1940; but in 1940 the Interstate Commerce Commission revised its classification and classed tax liability as a current liability. It is the largest single current liability in the above statements, representing approximately 70 per cent of total current liabilities.

*Public utility.* Hartford Electric Light Company reported the following current liabilities:

	1944	1943	1942
Accounts Payable . . . . .	\$ 343,939	\$ 795,927	\$ 165,763
Customers' Deposits . . . . .	33,271	29,661	28,479
Accrued Taxes and Interest on Bonds . .	2,622,788	2,251,289	2,418,458
Other Current and Accrued Liabilities . .	57,879	32,696	74,651
	<u>\$3,057,877</u>	<u>\$3,109,573</u>	<u>\$2,687,351</u>

*Industrial.* The current liabilities as reported by National Dairy Products Corporation were as follows:

	1944	1943	1942
Notes Payable . . . . .			\$ 1,757,012
Serial Debentures maturing within one year	\$ 1,500,000	\$ 1,500,000	1,500,000
Accounts Payable . . . . .	20,909,369	20,292,059	17,698,642
Accrued Liabilities . . . . .	7,478,448	6,505,940	5,618,443
Provision for Federal income and excess profits taxes . . . . .	33,080,000	29,000,000	18,500,000
Less: U. S. Treasury tax notes, Series C .	33,080,000	29,000,000	18,500,000
	<u>\$29,887,817</u>	<u>\$28,297,999</u>	<u>\$26,574,097</u>

Notes payable of \$1,757,012 in 1942 were retired in 1943. The serial debentures of \$1,500,000 reported as a current liability on December 31, 1944, were retired in January, 1945.

**Funded debt.** Funded debt represents the long-term debt evidenced by securities. It includes bonds or notes due after one year from the balance-sheet date.

*Railroad.* For a railroad, the funded debt consists of equipment trust certificates, mortgage bonds, collateral trust notes, debenture bonds, and any other evidence of debt that will mature more than two years from the date of issue. The funded debt reported by the Chesapeake & Ohio Railway was as follows:

	1944	1943	1942
	(000)	(000)	(000)
First Mortgage:			
Big Sandy R'y 4% . . . . . 1944		\$ 350	\$ 3,540
Paint Creek Branch 4% . . . . . 1945	\$ 539	539	539
Coal River R'y 4% . . . . . 1945	2,206	2,206	2,206
Pots Creek Branch 4% . . . . . 1946	600	600	600
Kanawha Bridge & Terminal 5% . . 1948	283	293	302
R & A Division 4% . . . . . 1989	6,000	6,000	6,000
Extended First Mortgage:			
Columbus & Hocking Valley 4% . . 1948	1,401	1,401	1,401
Columbus & Toledo 4% . . . . . 1955	2,441	2,441	2,441
Greenbrier 3½% . . . . . 1992	604	604	604
Second Mortgage:			
R & A Division 4% . . . . . 1989	998	998	998
General Mortgage 4½% . . . . . 1992	80,204	80,204	80,204
Refunding & Improvement Mortgage:			
4½%, Series C . . . . . 1996			18,152
3½%, Series D . . . . . 1996	37,754	38,015	38,267
3½%, Series E . . . . . 1996	27,803	27,998	28,094
Series G-1 to G-25 . . . . . 1996	20,660	20,660	22,237
First Consolidated Mortgage:			
Hocking Valley 4½% . . . . . 1999	15,854	15,856	15,858
Equipment Trust Obligations . . . .	44,620	31,449	33,132
Miscellaneous Obligations . . . . . 1946	3,060	3,797	5,586
	<u>\$245,033</u>	<u>\$233,411</u>	<u>\$260,161</u>
Less: Held by or for Company at Date (see contra) . . . . .	30,665	30,672	48,826
Total Funded Debt Outstanding . . .	<u>\$214,368</u>	<u>\$202,739</u>	<u>\$211,335</u>

*Public utility.* Hartford Electric Light Company reported funded debt as follows:

	1944	1943	1942
Thirty-year 3% Debentures 1937 Series, due April 1, 1967 . . . . .	\$3,010,000	\$3,080,000	\$3,150,000
Thirty-year 3½% Debentures 1941 Series, due Sept. 1, 1971 . . . . .	3,885,000	3,990,000	4,095,000
Total Long-Term Debt . . . . .	<u>\$6,895,000</u>	<u>\$7,070,000</u>	<u>\$7,245,000</u>

*Industrial.* Funded debt was reported by National Dairy Products Corporation as follows:

	1944	1943	1942
Serial Debentures (maturing semi-annually in the amount of \$750,000 on June 1 and Dec 1 of each year through Dec 1, 1950, less \$1,500,000 maturing within one year carried under current liabilities . . . . .)		\$ 6,000,000	\$10,500,000
3½% Debentures due 1960 (semi-annual purchase fund requirements \$275,000 minimum through Dec. 1, 1950, and \$825,000 thereafter through June 1, 1960)	\$51,700,000	52,800,000	53,916,000
	<u>\$51,700,000</u>	<u>\$58,800,000</u>	<u>\$64,416,000</u>

The serial debentures outstanding on December 31, 1943, amounted to \$7,500,000, of which \$6,000,000 was carried as funded debt, and of which \$1,500,000, which matured during 1944, was carried as a current liability. During 1944 the company retired the \$1,500,000 that matured during the year and, in addition, retired \$4,500,000 of the \$6,000,000 outstanding, leaving a balance of \$1,500,000 carried as a current liability which was retired on January 15, 1945. The company also retired \$1,100,000 of the 3½ per cent debentures during 1944, leaving \$51,700,000 outstanding on December 31, 1944.

**Reserves.** Reserves represent the allocation of surplus for specific purposes.

*Railroad.* The account "unadjusted credits" as reported by a railroad corresponds to the reserve account appearing in an industrial balance sheet.<sup>1</sup> Chesapeake & Ohio Railway reported the following unadjusted credits:

	1944	1943	1942
Premium on Funded Debt . . . . .	\$ 32,629	\$ 43,534	\$ 59,698
Accrued Amortization of Defense Projects			
— Road . . . . .	1,248,757	539,197	100,000
Accrued Depreciation — Equipment . . .	138,913,526	128,801,376	118,286,233
Accrued Amortization of Defense Projects			
— Equipment . . . . .	14,393,441	6,766,291	2,668,280
Accrued Depreciation — Miscellaneous			
Physical Property . . . . .	1,032,046	916,948	1,419,326
Other Unadjusted Credits . . . . .	6,743,339	4,949,830	4,978,792
Accrued Depreciation — Leased Property	29,980		
Total Unadjusted Credits . . . . .	<u>\$162,393,717</u>	<u>\$142,017,176</u>	<u>\$127,512,339</u>

The term "accrued depreciation" as used in a railroad report is the equivalent of the term "reserve for depreciation" as used in public utility and industrial reports.

<sup>1</sup> Under a general order of the Interstate Commerce Commission, effective January 1, 1945, the reserves of accrued depreciation, and accrued amortization of defense projects, for road and equipment property, and accrued depreciation of miscellaneous physical property, are now required to be treated as deductions from investment accounts on the asset side of the balance sheet.

*Public utility.* Hartford Electric Light Company reported the following reserve:

	1944	1943	1942
Reserve for Depreciation of Utility Plant . . . . .	\$11,051,426	\$10,336,084	\$9,614,444

The company gave the following explanation of this reserve:

The amount shown in this account is intended not only for depreciation of plant which has taken place to date but also is in part an advance preparation to cover depreciation which will occur in the future from causes which have not as of this date caused any depreciation of existing plant, such as hurricanes, floods, earthquakes, obsolescence, and other events which are not directly a function of time.

*Industrial.* Reserves as reported by National Dairy Products Corporation were:

	1944	1943	1942
Contingencies . . . . .	\$10,000,000	\$10,000,000	\$ 7,500,000
Prior Years' Federal and State Taxes . . . . .	6,986,312	5,732,016	3,888,409
Insurance . . . . .	546,797	612,846	828,029
Other . . . . .	83,762	309,225	
	<u>\$17,616,871</u>	<u>\$16,654,087</u>	<u>\$12,216,438</u>

**Miscellaneous liabilities.** This item consists of liabilities that do not appropriately fall into any one of the other classes of liabilities.

*Railroad.* The miscellaneous liabilities of a railroad are reported as "deferred liabilities" and consist of unusual liabilities of a somewhat indefinite nature. The Chesapeake & Ohio Railway, for example, reported:

	1944	1943	1942
Deferred Liabilities . . . . .	\$3,073,778	\$1,203,359	\$1,123,716

*Public utility.* The miscellaneous liabilities reported by Hartford Electric Light Company were:

	1944	1943	1942
Deferred Credits . . . . .	\$164,290	\$185,356	\$237,982
Contributions in Aid of Construction . . . . .	43,560	38,189	19,365
	<u>\$207,850</u>	<u>\$223,545</u>	<u>\$257,347</u>

*Industrial.* National Dairy Products Corporation reported the following miscellaneous liabilities:

	1944	1943	1942
Minority Stockholders' Interest in Subsidiary Companies . . . . .	\$345,308	\$321,401	\$297,823

The balance sheet of National Dairy Products Corporation is a consolidated statement of the parent company and its domestic subsidiary companies. Since the parent company does not own all of the outstanding stock of some of the subsidiaries, the subsidi-

ary company stock outstanding in the hands of stockholders represents a minority interest. For this reason the parent company does not have an undivided interest in the net assets of the subsidiary company. The interest of the minority stockholders is reported on the liability side of the consolidated balance sheet and represents the aggregate of the par value of the minority stock and the minority interest's proportionate share of the surplus of the subsidiary company.

**Capital stock.** The capital stock account represents the stock that has been issued and is outstanding. The value shown is at either par value or stated value.

*Railroad.* The capital stock as reported by Chesapeake & Ohio Railway consisted of:

	1944	1943	1942
Preference — Series A 4% . . . . .			\$ 15,314,708
Common (7,657,355 shares par value \$25 each and \$69 44 scrip) . . . . .	\$191,433,944	\$191,433,944	191,433,944
	<u>\$191,433,944</u>	<u>\$191,433,944</u>	<u>\$206,748,862</u>
Less: Held by or for Company at Date —			
Common (Contra) . . . . .	25	25	25
Total Outstanding . . . . .	<u>\$191,433,919</u>	<u>\$191,433,919</u>	<u>\$206,748,627</u>

The 4 per cent preference stock series A (153,147 shares with a par value of \$100) outstanding in the amount of \$15,314,708, since its issuance as a dividend on the common stock in 1937, was redeemed at its call price of 107½ in 1943. The common stock consisted of 7,657,356 shares with a par value of \$25 each, of which one share was held in the treasury.

*Public utility.* Hartford Electric Light Company reported the following capital stock:

	1944	1943	1942
Capital Stock:			
Common Stock (840,000 shares par \$25)	\$21,000,000	\$21,000,000	\$21,000,000

Here the stock outstanding was overstated, since included in the 840,000 shares were 2,490 shares held in the treasury for future sale to employees and reported as an asset in the "Investment and Fund Accounts." To determine the actual outstanding stock, it is necessary to deduct that treasury stock from the capital stock as reported. The capital stock outstanding in 1944 was 837,510 shares (840,000 — 2,490) with a total par value of \$20,937,750 (837,510 × \$25).

*Industrial.* The capital stock as reported by National Dairy Products Corporation was as follows:



	1944	1943	1942
Common Stock:			
Authorized — 8,000,000 shares without par value			
Issued — 6,255,247 shares at stated value	\$51,266,676	\$51,266,676	\$51,266,676

The company was authorized to issue 8,000,000 shares of stock but only 6,255,247 shares were issued and outstanding, leaving 1,744,753 unissued.

**Surplus.** Surplus is the excess of the aggregate value of the assets over the stated value of the liabilities, reserves, and capital stock. It is the item that makes the balance sheet a balanced sheet.

*Railroad.* The surplus as reported by Chesapeake & Ohio Railway was as follows:

	1944	1943	1942
Premium on Capital Stock . . . . .	\$ 2,301,093	\$ 2,301,093	\$ 2,301,093
Surplus:			
Unearned Surplus . . . . .	281,135	279,729	
Appropriated Surplus . . . . .	16,430,545	30,234,608	32,333,062
Earned Surplus . . . . .	153,142,253	139,019,909	136,509,603
	<u>\$172,155,026</u>	<u>\$171,835,339</u>	<u>\$171,143,758</u>

*Public utility.* Hartford Electric Light Company reported surplus as:

	1944	1943	1942
Earned Surplus . . . . .	\$2,915,662	\$3,170,877	\$3,397,494

This surplus was overstated in that the company included treasury stock as an asset. The elimination of \$117,026 from the asset side of the balance sheet made necessary a similar elimination from the liability side. The elimination of \$117,026 from the liability side is accomplished by charging \$62,250 (2,490 shares at \$25) to the capital stock account and the excess above par value of \$54,776 (\$117,026 — \$62,250) to surplus. The net surplus, therefore, was \$2,860,886 (\$2,915,662 — \$54,776) in 1944, \$3,116,101 in 1943, and \$3,342,718 in 1942.

*Industrial.* The surplus of National Dairy Products Corporation consisted of:

	1944	1943	1942
Capital Surplus . . . . .			\$ 2,230,338
Earned Surplus . . . . .	\$57,196,015	\$50,558,498	63,594,449
	<u>\$57,196,015</u>	<u>\$50,558,498</u>	<u>\$65,824,787</u>

Inasmuch as goodwill of \$22,059,854 was eliminated from the statement of assets in 1942 for analytical purposes, on the same basis the surplus in 1942 should be reduced to \$43,764,933. The capital surplus of \$2,230,338 in 1942 was eliminated in 1943. Since then the company has had only an earned surplus.

## Review Questions

1. Define a balance sheet.
2. Name the divisions of a balance sheet.
3. Discuss the relative significance of assets on the one hand and of liabilities and net worth on the other.
4. Name the forms of capital investment.
5. Name the sources of capital.
6. Discuss the significance of the balance sheet to the investor.
7. Name the assets representing working capital and fixed capital, respectively.
8. Distinguish between the fixed assets of a railroad, of a public utility, and of an industrial company.
9. Indicate the nature of the non-operating property of a railroad company.
10. Define deferred assets and indicate their nature.
11. Discuss the nature of intangible assets and discuss the problem of their valuation.
12. What is meant by "unadjusted debits" in a railroad company balance sheet?
13. Define current liabilities and indicate their nature.
14. Define funded debt.
15. What is meant by "unadjusted credits" in a railroad company balance sheet?
16. Define capital stock and surplus.

## Assignment

(a) Construct the balance sheet from the following data:

## (1) RAILROAD

Surplus . . . . .	\$ 309,346,000
Investments . . . . .	1,115,313,000
Unadjusted Debits . . . . .	7,573,000
Deferred Liabilities . . . . .	12,904,000
Current Assets . . . . .	181,357,000
Unadjusted Credits . . . . .	171,658,000
Current Liabilities . . . . .	79,956,000
Deferred Assets . . . . .	17,276,000
Capital Stock . . . . .	321,894,000
Miscellaneous Liabilities . . . . .	57,207,000
Funded Debt . . . . .	368,554,000

## (2) PUBLIC UTILITY

Reserves . . . . .	\$171,433,000
Property, Plant and Equipment . . . . .	746,378,000
Current Liabilities . . . . .	48,397,000
Deferred Charges . . . . .	27,998,000
Funded Debt . . . . .	343,882,000
Earned Surplus . . . . .	48,574,000
Current Assets . . . . .	133,045,000
Capital Stock . . . . .	317,967,000
Investments . . . . .	11,019,000
Miscellaneous Assets . . . . .	14,070,000
Miscellaneous Liabilities . . . . .	2,257,000

## (3) INDUSTRIAL

Current Liabilities . . . . .	\$22,926,000
Deferred Charges . . . . .	2,165,000
Reserves . . . . .	24,702,000
Current Assets . . . . .	89,419,000
Capital Stock . . . . .	64,875,000
Property, Plant and Equipment* . . . . .	66,536,000
Surplus . . . . .	39,795,000
Miscellaneous Assets . . . . .	4,816,000
Miscellaneous Liabilities . . . . .	10,638,000

\* Net after reserve for depreciation.

- (b) Indicate the account into which the following items would fall in a railroad balance sheet working funds, advances, prepaid expenses, equipment, insurance funds, bond discount, general expenditures, contingent assets, miscellaneous funds, and improvements on leased lines.

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## CHAPTER FIFTEEN

### SURPLUS AND RESERVES

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**Surplus.** The stockholders' interest in a company is referred to as the net worth. It is represented by the excess of total assets over total liabilities. For instance, the net worth of the National Dairy Products Corporation in 1944 was \$108,462,691, computed as follows:

Total Assets . . . . .		\$208,012,687 <sup>12</sup>
Total Liabilities:		
Current . . . . .	\$29,887,817	
Funded Debt . . . . .	51,700,000	
Minority Interest . . . . .	345,308	
Reserves . . . . .	<u>17,616,871</u>	99,549,996
Net Worth . . . . .		<u>\$108,462,691</u>

Net worth, in turn, consists of capital stock and surplus. For example, the net worth of National Dairy Products Corporation consisted of:

Common Stock . . . . .	\$51,266,676
Surplus . . . . .	<u>57,196,015</u>
Net Worth . . . . .	<u>\$108,462,691</u>

Surplus, therefore, is the excess of net worth over capital stock. Inasmuch as surplus is a residual account, it is correct only to the extent that assets and liabilities have been correctly stated and capital stock has been stated at its par or stated value.

**Classes of surplus.** Surplus may be classed as earned surplus or capital surplus. National Dairy Products Corporation reported surplus as:

	1944	1943	1942
Earned Surplus . . . . .	\$57,196,015	\$50,558,498	\$63,594,449
Capital Surplus . . . . .			<u>2,230,338</u>
	<u>\$57,196,015</u>	<u>\$50,558,498</u>	<u>\$65,824,787</u>

The company reported an earned surplus in each of the years shown but did not report a capital surplus after 1942.

*Earned surplus.* Earned surplus arises from earnings which the management, as a matter of policy, has retained and accumulated. It constitutes a measure of the success of the company. The earned surplus as reported by National Dairy Products Corporation declined from \$63,594,449 in 1942 to \$50,558,498 in 1943 but increased to \$57,196,015 in 1944.

*Capital surplus.* Capital surplus arises from sources other than earnings. The usual sources of capital surplus are (a) paid-in surplus, (b) purchase of assets for less than book value, (c) reappraisal of assets at a higher value, (d) reduction in par or stated value of capital stock, (e) purchase by a company of its own stock below par or stated value, (f) the sale of treasury stock for more than its cost, or (g) the retirement of debt at less than book value.

Capital surplus known as paid-in surplus represents either capital paid in by the stockholders in excess of the par or stated value of the stock, or initial surplus at the formation of a new corporation through merger, or surplus arising from the sale of treasury stock for more than its cost price. Continental Can Company, for example, sold 188,780 shares of common stock in 1936 at \$60 a share. Inasmuch as the par value of the stock was \$20 a share, the company credited capital stock with \$20 a share or an aggregate of \$3,775,600, and capital surplus with \$40 a share or a total of \$7,551,200.

Capital surplus may arise from the purchase of assets for less than book value. The Texas Company, for instance, acquired the assets of Selby Oil and Gas Company and several other companies for approximately 296,000 shares of the capital stock of the Texas Company with an aggregate par value of \$7,400,000. The value assigned to the properties acquired was \$13,868,007, or \$6,468,007 in excess of the par value of the stock given in payment. As a result, the excess of the book value of the assets over the par value of the stock, amounting to \$6,468,007, was credited to capital surplus.

If any of the assets are reappraised at a higher value than the book value and the current book value is thereby written up, the surplus arising through the increase in value is classed as capital surplus. DuPont & Company, for example, owns 10,000,000 shares of General Motors Corporation common stock, which it valued at \$23.15 a share or an aggregate value of \$231,500,000 in its 1943 report. The company has followed the practice of adjusting the book value of this stock in March of each year to correspond to the equity value of the stock as indicated by the consolidated balance sheet of General Motors Corporation for December 31 of the pre-

ceding year. The amount by which the investment is written up is credited to capital surplus. The adjustments in the investment and in the capital surplus accounts of DuPont & Company is evidenced by the following:

	<i>March Equity Value</i>		<i>Addition to Capital Surplus</i>
	<i>Per Share</i>	<i>Total</i>	
1940 . . .	\$20.25	\$202,500,000	\$5,500,000
1941 . . .	20.80	208,000,000	5,500,000
1942 . . . . .	21.60	216,000,000	8,000,000
1943 . . . . .	23.15	231,500,000	15,500,000
1944 . . . . .	24.70	247,000,000	15,500,000

Capital surplus may be created by writing down the par or stated value of the capital stock. The Public Service Electric and Gas Company of New Jersey, with the approval of the Securities and Exchange Commission, reduced the stated value of its common stock by \$50,000,000 and thus created a capital surplus of \$50,000,000. The West Penn Power Company reduced the stated value of its no par common stock from \$31,750,000 to \$21,750,000, without reducing the number of shares, and created a capital surplus of \$10,000,000 in anticipation of any write-downs of its utility plant which might result from orders by the Federal Power Commission and the Pennsylvania Public Utility Commission.

When treasury stock is sold for more than its cost price, the excess of the sale price over the cost price is credited to capital surplus.

**Use of surplus.** Surplus is used usually to absorb losses or deficits, to provide for specific capital uses, or to pay dividends. The particular use made of surplus, however, depends upon the nature of the surplus. Earned surplus arises from earnings and is not a part of the contributed capital. It may be used to absorb losses, distributed as dividends, or reserved for corporate purposes. Capital surplus, on the other hand, is by its very nature part of invested or permanent capital. As such it is not usually available for distribution as dividends nor for the setting up of reserves. It is available only for transfer to the capital stock account by the declaration of a stock dividend. The stock dividend increases the capital stock account by transferring to it some of the contributed capital which, at the time of original record, was withheld from it.

**Surplus adjustments.** The financial statements usually indicate the year-end adjustments of the surplus. Those adjustments (debit or credit) may be divided into two classes: (a) adjustments that relate to the current accounting period and that do not represent

a loss or gain, and (b) adjustments that relate to preceding accounting periods.

*Current period adjustments.* The usual adjustments relating to the current accounting period, and representing debits to surplus, are the payment of dividends, appropriations for surplus reserves, and the elimination of intangible assets. Dividends declared by the board of directors represent a withdrawal of some of the stockholders' interest rather than a loss to the company. The Cudahy Packing Company, for example, reported earned surplus on October 28, 1944, as:

Balance at October 31, 1943	\$6,796,348
Net Income for year ended Oct. 28, 1944 . . . . .	<u>3,190,061</u>
	\$9,986,409
Deduct —	
Unamortization portion of debt discount and expense and premium on bonds and debentures redeemed in 1944 . . . . .	<u>202,645</u>
	\$9,783,764
Dividends paid in cash on —	
7% preferred stock . . . . .	\$457,835
6% preferred stock . . . . .	120,000
Common stock . . . . .	<u>140,247</u>
	718,082
Surplus, Oct. 28, 1944 . . . . .	<u>\$9,065,682</u>

The net income of \$3,190,061 for the year became part of surplus from which the cash dividend of \$718,082 was distributed.

The Sun Oil Company in 1944 declared a 10 per cent stock dividend as a result of which approximately \$10,000,000 was transferred from earned surplus to capital stock account:

Earned Surplus — Jan. 1, 1944 . . . . .	\$27,062,503
- Less Adjustments (net) . . . . .	<u>65,330</u>
	\$26,997,173
Net Income — Year 1944 . . . . .	<u>13,350,217</u>
	\$40,347,390
Less Cash Dividends . . . . .	<u>3,257,748</u>
Surplus before Application of Stock Dividend . . . . .	\$37,089,642
Less Stock Dividend on Common Stock . . . . .	<u>9,745,149</u>
Earned Surplus — December 31, 1944 . . . . .	\$27,344,493

An appropriation of surplus as a reserve places part of the surplus under a new balance-sheet title. For example, International Business Machines Corporation in 1940 transferred \$2,000,000 from earned surplus to "reserve for contingencies." This action removed \$2,000,000 from surplus and set it up as a new account.

The elimination of an intangible asset, such as goodwill, also reduces the surplus. For example, Socony-Vacuum Oil Company in 1934 reduced the par value of its stock from \$25 to \$15 a share,

or by \$317,084,620, which was transferred to capital surplus, thus increasing capital surplus to \$342,737,434. Goodwill of \$228,123,581 was then written off by a charge to capital surplus.

Capital Stock, 1933	\$792,711,438
Capital Stock, 1934 . . . . .	475,626,818
	<u>\$317,084,620</u>
Capital Surplus, 1933 . . . . .	\$ 25,652,814
Transferred from Capital Stock . . . . .	317,084,620
Capital Surplus before write-off . . . . .	<u>\$342,737,434</u>
Goodwill written-off . . . . .	228,123,581
Capital Surplus, 1934 . . . . .	<u>\$114,613,853</u>

*Preceding-period adjustments.* Adjustments relating to preceding accounting periods usually concern income and expense items and generally refer to insufficient or excessive provisions in past periods for such items as taxes, bad debts, and depreciation. If in 1945, for example, it is determined that the provision for taxes, charged against 1944 earnings, was inadequate, the deficiency is not a proper charge against 1945 earnings because the charge applies not to the current year but to the year before. It should be charged against earned surplus in 1945. In like manner, adjustments of this class may result in a credit to earned surplus. DuPont & Company, for example, revised the provision for taxes on income in prior years in 1942 and transferred \$323,130 in excess of requirements to surplus. The liability of International Harvester Company for federal income taxes for the years 1933-1939 was finally determined in 1944, and the excess of the provision made in those years over the requirements, amounting to \$4,573,293, was then transferred to earned surplus.

International Harvester Company follows the policy of charging off receivables that are over five years old. The company collected \$4,928,843 in 1937, however, on receivables that had been charged off. After crediting those collections to the "reserve for losses on receivables," the reserve applicable to receivables of prior years was believed to be in excess of requirements and, accordingly, \$3,500,000 was transferred from the reserve to earned surplus. The company has maintained a "reserve for special maintenance" to provide for extraordinary renewals and replacements at manufacturing plants. The management considered this reserve as excessive and transferred \$9,500,000 from the reserve to earned surplus in 1939. Again in 1944 the company transferred \$10,634,048 from "reserve for depreciation" to earned surplus. This action reflected the decision of the company in 1942 to change its policy of providing for depreciation of property to conform to that used for federal income tax purposes. While such changes are made in the



reserve accumulated on the books previous to 1942, the excess of the book reserve over the reserve for tax purposes, which amounted to \$10,634,048 in 1944, was transferred to earned surplus.

The scrutiny of the earned surplus account by the investor is primarily to detect any substantial surplus adjustments that may have a significance as to the financial condition of the company.

**Railroad.** The corporate surplus reported by the Chesapeake & Ohio Railway was:

	1944	1943	1942
Earned Surplus . . . . .	\$153,142,253	\$139,019,909	\$136,509,603
Appropriated Surplus . . . . .	16,430,545	30,234,608	32,333,062
Premium on Capital Stock . . . . .	2,301,093	2,301,093	2,301,093
Unearned Surplus . . . . .	281,135	279,729	
	<u>\$172,155,026</u>	<u>\$171,835,339</u>	<u>\$171,143,758</u>

Earned surplus represents the surplus available for distribution as dividends. Appropriated surplus is surplus that has been withdrawn from earned surplus and appropriated or reserved for corporate purposes. Premium on capital stock includes the excess of the actual cash value (at the time of the sale of the stock) of the consideration received over the amounts recorded in the capital stock account for par value stock plus accrued dividends, if any, and subsequent assessments against stockholders representing payments required in excess of par or other amounts recorded in the capital stock account. Unearned surplus represents surplus arising from donations by the stockholders, amounts representing reduction of the par or recorded value of the capital stock, gains from the acquisition, retirement, or resale of reacquired shares, and long-term debt of the company forgiven by stockholders.

Analysis of the earned surplus account revealed the following changes:

	1944	1943	1942
Earned Surplus, Jan. 1 . . . . .	\$139,019,909	\$136,509,603	\$137,405,355
Add:			
Credit balance transferred from income	26,839,280	30,852,133	32,641,351
Adjustment of reserves for depletion on coal mined from Eunice Mine Property . . . . .		660,140	
Adjustment in accounting for seven branch lines acquired in 1933 . . . .			846,717
Amount transferred from appropriated surplus account of property retire- ments . . . . .	14,013,084		418,091
Adjustment in investment in Pittston Company stock to cost basis . . . .			7,687,299
Amount transferred from sinking fund reserve at maturity of Big Sandy Railway bonds . . . . .	215,584		
Miscellaneous items . . . . .	24,577		
	<u>\$180,112,434</u>	<u>\$168,021,876</u>	<u>\$178,998,813</u>

Deduct:	1944	1943	1942
Dividends . . . . .	\$ 26,800,739	\$ 27,258,320	\$ 27,410,794
Premium on preference stock A, retired . . . . .		1,148,603	
Premium on funded debt retired . . . . .		132,353	
Net loss from sale of securities . . . . .		167,792	518,590
Loss on roadway property retirements . . . . .		121,192	
Reserve for adjustment in investment in securities . . . . .			9,441,351
Loss on sale of White Sulphur Springs property . . . . .			2,992,299
Loss on road and equipment retired . . . . .			2,106,634
Miscellaneous items . . . . .	169,442	173,707	19,542
	<u>\$ 26,970,181</u>	<u>\$ 29,001,967</u>	<u>\$ 42,489,210</u>
Balance, December 31 . . . . .	\$153,142,253	\$139,019,909	\$136,509,603

The company began the year 1944 with an earned surplus of \$139,-019,909, to which was added \$26,839,280 net income for the year ending December 31, 1944, \$14,013,084 from appropriated surplus account of property retirements, \$215,584 from sinking fund reserve at the maturity of Big Sandy Railway bonds, and \$24,577 from miscellaneous items, making a total earned surplus of \$180,112,434. The earned surplus was charged, however, with dividends of \$26,-800,739 paid out of 1944 earnings and miscellaneous charges of \$169,442, or a total of \$26,970,181. As a result, the earned surplus at December 31, 1944, was \$153,142,253.

**Public utility.** The surplus reported in public utility balance sheets is usually relatively small, owing to the restricted earning power of the companies and to their unwillingness to disclose what might be regarded as excessive earning power. Hartford Electric Light Company reported:

	1944	1943	1942
Earned Surplus . . . . .	\$2,915,662	\$3,170,877	\$3,397,494

Analysis of this account revealed the following changes:

	1944	1943	1942
Surplus, January 1 . . . . .	\$3,170,876	\$3,397,494	\$3,635,313
Credits:			
Net income transferred . . . . .	2,055,105	2,100,521	2,072,119
Miscellaneous . . . . .			380
	<u>\$5,225,981</u>	<u>\$5,498,015</u>	<u>\$5,707,812</u>
Deduct:			
Common stock dividends . . . . .	2,303,320	2,303,316	2,303,318
Premium on bonds retired . . . . .	7,000	7,000	7,000
Miscellaneous adjustments, previous periods . . . . .		16,823	
	<u>\$2,310,320</u>	<u>\$2,327,139</u>	<u>\$2,310,318</u>
Surplus, December 31 . . . . .	\$2,915,661	\$3,170,876	\$3,397,494

The surplus of \$3,170,876 with which the company began the year in 1944 was increased to \$5,225,981 by the net income for the year of

\$2,055,105. It was reduced, however, by the distribution of \$2,303,-320 in the form of common stock dividends and \$7,000 premium on bonds retired, leaving a surplus at the end of the year of \$2,915,661.

**Industrial.** The surplus as reported by National Dairy Products Corporation consisted of:

	1944	1943	1942
Earned Surplus . . . . .	\$57,196,015	\$50,558,498	\$63,594,449
Capital Surplus . . . . .			2,230,338
	<u>\$57,196,015</u>	<u>\$50,558,498</u>	<u>\$65,824,787</u>

Analysis of earned surplus revealed the following changes:

	1944	1943	1942
Surplus, January 1 . . . . .	<u>\$50,558,498</u>	<u>\$63,594,449</u>	<u>\$55,856,805</u>
Credits:			
Net income for year . . . . .	13,318,288	13,048,811	12,221,852
Restoration of balance of reserve from loans to employees . . . . .	200,000		
Restoration of certain property written down in 1939 . . . . .			519,990
	<u>\$13,518,288</u>	<u>\$13,048,811</u>	<u>\$12,741,842</u>
	<u>\$64,076,786</u>	<u>\$76,643,260</u>	<u>\$68,598,647</u>
Debits:			
Dividends . . . . .	6,880,771	6,255,247	5,004,198
Adjustments to state goodwill at nominal value of \$1 (less portion charged to capital surplus) . . . . .		19,829,515	
	<u>\$ 6,880,771</u>	<u>\$26,084,762</u>	<u>\$ 5,004,198</u>
Surplus, December 31 . . . . .	<u>\$57,196,015</u>	<u>\$50,558,498</u>	<u>\$63,594,449</u>

The surplus of \$50,558,498 with which the company began the year in 1944 was increased to \$64,076,786 by the net income for the year of \$13,318,288 and the transfer of \$200,000 from reserve for loans to employees. The company distributed dividends of \$6,880,771, thus reducing surplus to \$57,196,015.

Capital surplus was eliminated in 1943 by the following charges:

Capital Surplus, January 1 . . . . .	\$2,230,338
Debit:	
Portion of adjustment to state goodwill at nominal value of \$1 . . . . .	<u>2,230,338</u>

In accordance with the action of the directors, goodwill previously valued at \$22,059,854 was written down to the nominal value of \$1. This write-off of \$22,059,853 was charged to capital surplus, but inasmuch as capital surplus was insufficient to absorb the entire write-down, the balance of \$19,829,515 had to be charged to earned surplus.

**Reserves.** A reserve is an amount set aside on the books for a specific purpose. The appropriation of a reserve recognizes the existence of the need for which the appropriation is made and at

the same time reduces the surplus available for dividends. Such reservation may arise out of three possible situations: legal, financial, or voluntary. The establishment of a reserve may be required by a bond indenture or by the preferred stock provisions. Under some bond indentures the issuer is required to establish a reserve for the retirement of the bond. In some companies a similar reserve is required for the retirement of the preferred stock. A reserve may be set up also in accordance with the usual financial policy to provide for such cash expenses as taxes and insurance or for non-cash expenses as depreciation and doubtful accounts. In accordance with the fiscal policy the management may voluntarily establish a reserve for specific corporate purposes, such as expansion of plant or plant rehabilitation, or for general corporate purposes, such as a reserve for contingencies.

**Creation of reserve.** The creation of a reserve reduces surplus available for dividends. For example, National Dairy Products Corporation in 1944 had reserves aggregating \$80,333,182 and consisting of reserves for:

Doubtful notes and accounts . . . . .	\$ 3,293,973
Foreign investments and advances . . . . .	3,503,935
Depreciation of property, plant, etc. . . . .	55,918,403
Insurance . . . . .	546,797
Prior years' federal and state taxes . . . . .	6,986,312
Contingencies . . . . .	10,000,000
Miscellaneous . . . . .	83,762
Total reserves . . . . .	<u>\$80,333,182</u>

If these reserves had not been provided, the earned surplus on the balance sheet would have been \$137,529,197 instead of \$57,196,015.

A reserve may be created either by a charge to surplus or by a charge to income. International Harvester Company, for example, in 1944 had a reserve for "Post-war rehabilitation, obsolescence, and contingencies" and a reserve for "development and extensions." The former reserve represented provision for the cost of reconverting and rehabilitating plants and other properties, for unusual obsolescence, and for other special costs that might be necessary for post-war operations. The company increased the reserve from \$20,000,000 in 1943 to \$30,000,000 in 1944 by transferring \$10,000,000 from surplus. The latter reserve represented provision for extraordinary programs involving large expenditures periodically required for tooling and pattern equipment. This reserve was increased from \$5,915,949 in 1942 to \$10,915,949 in 1944 by annual charges to cost of goods sold of \$2,500,000 in 1943 and in 1944.

**Reserve v. fund.** A reserve differs from a fund in two respects: (a) a reserve is a liability account, a valuation account, or a part of the proprietary equity, whereas a fund is an asset; and (b) a reserve is created either by a charge to surplus or to income, whereas a fund represents specifically segregated assets. The establishment of a reserve simply retains earnings in the business by reducing the surplus, thus making the amount of the reserve unavailable for distribution as dividends to the stockholders, but it does not assure the availability of cash when the need for which the reserve was established arises. In the following situation the establishment of a reserve of \$20,000,000 reduces the surplus available for the payment of dividends from \$116,747,869 to \$96,747,869 but leaves the entire cash account of \$51,485,640 undisturbed and available for such distribution.

## PRIOR TO ESTABLISHMENT OF RESERVE

Cash . . . . .	\$51,485,640	Liabilities . . . . .	\$248,843,157
Other Assets . . . . .	483,933,746	Capital Stock . . . . .	169,828,360
		Surplus . . . . .	116,747,869
Total . . . . .	<u>\$535,419,386</u>	Total . . . . .	<u>\$535,419,386</u>

## AFTER ESTABLISHMENT OF RESERVE

Cash . . . . .	\$ 51,485,640	Liabilities . . . . .	\$248,843,157
Other Assets . . . . .	483,933,746	Capital Stock . . . . .	169,828,360
		Reserve . . . . .	20,000,000
		Surplus . . . . .	96,747,869
Total . . . . .	<u>\$535,419,386</u>	Total . . . . .	<u>\$535,419,386</u>

A fund, on the other hand, is established to make definite provision that cash or its equivalent will be on hand to take care of the need as it arises. In the above illustration, if simultaneously with the establishment of the reserve, a fund is set up by the segregation of cash, the cash now available for dividends is reduced to \$31,485,640, and \$20,000,000 in cash is definitely reserved for the purpose for which the reserve has been created.

Cash . . . . .	\$ 31,485,640	Liabilities . . . . .	\$248,843,157
Reserve Fund . . . . .	20,000,000	Capital Stock . . . . .	169,828,360
Other Assets . . . . .	483,933,746	Reserve . . . . .	20,000,000
		Surplus . . . . .	96,747,869
Total . . . . .	<u>\$535,419,386</u>	Total . . . . .	<u>\$535,419,386</u>

The creation of a reserve and a fund, therefore, protects the working capital position of the company by restricting cash dividend payments and prevents the use of the contents of the fund for any purpose other than that for which the fund was intended.

A fund usually consists of cash or securities and is generally set

aside to meet such anticipated requirements as a sinking fund for the retirement of funded debt or preferred stock, as insurance funds under a self-insurance plan, or as pension funds. Goodyear Tire & Rubber Company, for example, in 1938 reported a "Pension Trust Fund" of \$3,897,156 as an asset and a "Reserve for Pension Trust Fund" of \$3,897,156 as a liability. Similarly, Chesapeake & Ohio Railway in 1942 reported as an asset "Sinking Funds" of \$580,438 and as a liability "Sinking Fund Reserve" for a like amount. International Nickel Company of Canada in 1943 reported as an asset a fund "Securities held against retirement system reserve at or below cost . . . \$16,296,205" and as a liability "Retirement system reserve . . . \$16,297,991." In these instances the object of the fund and the need for liquidity required cash in excess of the amount provided by ordinary collections in the course of operations.

**Classes of reserves.** Reserves may be classified as valuation, liability, or surplus reserves.

**Valuation reserves.** A valuation reserve applies to an asset and is set up to provide for shrinkage in the value of the asset. It is created by a charge to income in an effort to arrive at an accurate statement of profit for the period and to adjust the balance-sheet value of the asset. A valuation reserve applies to fixed capital assets such as plant and investments and to current or working capital assets such as marketable securities, receivables, and inventory.

**Fixed assets.** Fixed assets lose value through depreciation, obsolescence, or depletion. This loss in value is provided for in the income statement by a charge to income and a credit to a reserve account which, in conjunction with the investment in the asset carried on the books, reflects the net current book valuation of the asset. In 1944, for example, Chesapeake & Ohio Railway reported "Accrued Depreciation—Equipment" of \$138,913,526 against "Equipment" valued at \$638,350,457, giving the asset "Equipment" a net book value of \$499,436,931. Hartford Electric Light Company reported a "Reserve for Depreciation of Utility Plant" of \$11,051,426 and an investment in utility plant of \$38,263,613, or a net utility plant value of \$27,212,187. At the same time National Dairy Products Corporation reported:

Land . . . . .	\$ 13,003,610
Buildings, Machinery, and Equipment . . . . .	127,888,420
	<u>\$140,892,030</u>
Less: Reserves for Depreciation . . . . .	55,918,403
Net . . . . .	<u>\$ 84,973,627</u>

In mining companies a periodic estimate of the portion of the asset exhausted in operation, known as depletion, is necessary to show the true present value of the asset. For instance, Anaconda Copper Mining Company reported:

Timber lands and phosphate deposits . . . . .	\$6,295,076
Less reserve for depletion . . . . .	<u>2,691,811</u>
Net . . . . .	\$3,603,265

The depreciation reserve does not necessarily increase each year by the full amount charged against earnings for depreciation. When property is retired its gross value is deducted from the property account and the depreciation accrued against it to date is deducted from the depreciation reserve. In some instances fully depreciated property is carried on the books until retired from use. If, however, the property is retired before it has been fully depreciated, there is sustained a "loss on property retired" which is charged to surplus and not against the current earnings.

Investments in subsidiary companies lose, or face the prospect of losing, value through changes in current conditions for which provision must be made. General Electric Company, with substantial investments in affiliated companies, sets up a reserve to provide for possible loss in value of those investments, which it has reported as:

Affiliated Companies:

International General Electric Co. . . . .	\$ 38,904,473
Investment Companies . . . . .	106,591,188
Manufacturing, selling, real estate, and other companies . . . . .	<u>49,092,128</u>
	\$194,587,789
Miscellaneous . . . . .	<u>1,479,871*</u>
	\$196,067,660
Less: Reserve for Investments . . . . .	<u>59,581,702</u>
Net . . . . .	\$136,485,958

Other companies have either written off some investments or have set up a reserve equal to the book value of the investments. For instance, National Dairy Products Corporation wrote down its investments in Continental European subsidiaries to a nominal value in 1941 and increased the reserve for investments in other foreign subsidiaries from \$1,899,419 in 1941 to \$3,503,935 in 1944.

Foreign Subsidiaries:

Canadian . . . . .	\$2,599,563
English, Argentine, and Australian . . . . .	<u>3,998,513</u>
Continental European . . . . .	<u>1</u>
	\$6,598,077
Less: Reserve . . . . .	<u>3,503,935</u>
Net . . . . .	\$3,094,142

American Radiator & Standard Sanitary Corporation set up a reserve equal to the book value of some of its foreign subsidiaries and reported its investments in them as follows:

Belgian, French, German, Dutch, and Italian Subsidiaries (less reserve \$6,552,651) . . . . . None

This meant that those investments were carried on the books at \$6,552,651, but a reserve for a possible loss in value had been set up amounting to \$6,552,651.

*Current assets.* The current assets subject to loss in value are marketable securities, receivables, and inventory. While marketable securities should be valued at the lower of market or cost, some companies also provide a reserve for possible loss in value. Corn Products Refining Company in 1943, for example, reported marketable securities at market value of \$37,202,113 and at the same time set up a reserve of \$1,119,551.

Marketable Securities at quoted market value:	
U. S. Government . . . . .	\$23,796,868
State and Municipal . . . . .	10,439,496
Other . . . . .	2,965,749
	<u>\$37,202,113</u>
Less. Reserve for depreciation . . . . .	1,119,551
Total Marketable Securities . . . . .	<u>\$36,082,562</u>

Marketable securities had a quoted market value in 1944 of \$35,-914,337 against a cost of \$35,442,281. In view of the fact that approximately 94 per cent of the marketable securities consisted of federal and municipal obligations, the company changed its practice and valued the securities in the balance sheet at cost. At the same time the company announced the policy of providing a reserve for loss in value only when the quoted market value was lower than the original cost.

The reserve for doubtful accounts and for discounts is set up as an offset to the notes and accounts of customers and indicates the management's estimate of the loss in value which is likely to occur in their collection. The purpose of this reserve is to provide, in the light of experience, the probable amount of the loss in order to state more correctly the liquidating value of the asset on the balance sheet and to charge the loss to the earnings for the period in which the sale happened. Though this purpose is not always fully accomplished, the estimate at the close of each fiscal year does affect an equalizing of bad debt expenses from year to year. National Dairy Products Corporation in 1944, for example, reported receivables of \$26,874,682 and a reserve for doubtful accounts of \$3,293,973.



	1944	1943
Receivables:		
Notes Receivable . . . . .	a	\$ 291,156
Accounts Receivable . . . . .		25,516,790
	<u>\$26,874,682</u>	<u>\$25,807,946</u>
Less: Reserve for Doubtful Debts	3,293,973	2,935,042
	<u>\$23,580,709</u>	<u>\$22,872,904</u>

<sup>a</sup> Not broken down

American Radiator & Standard Sanitary Corporation has reported receivables after the reserve for doubtful accounts as: "Accounts Receivable (less Reserve \$896,985) . . . \$9,441,718." Inasmuch as the reserve amounted to \$896,985, the total receivables aggregated \$10,338,703. Goodyear Tire & Rubber Company, on the other hand, has distinguished between the reserve for discounts and allowances and the reserve for bad debts:

Accounts and Notes Receivable:	
Trade (less reserve for discounts and allowances) . . . . .	\$27,671,844
Other . . . . .	910,263
	<u>\$28,582,107</u>
Less: Reserve for bad debts . . . . .	2,601,546
	<u>\$25,980,561</u>

Though inventory should be valued at market or cost, whichever is lower, companies whose inventory is subject to possible rapid and drastic decline in value sometimes make provision for such decline by establishing a reserve. National Dairy Products Corporation in 1942 valued inventory at the lower of cost or market and at the same time maintained a reserve for "possible future inventory adjustments and other contingencies." A similar provision appeared in the 1941 report of Swift & Company, in the 1942 report of International Harvester Company, and in the 1944 report of Montgomery Ward & Company. The latter company valued inventory (priced at the lower of cost or market) at \$117,530,922 and set up a reserve for "Possible future inventory price decline" of \$16,000,000.

In considering reserves for declines in marketable securities or in inventory, it is necessary to determine whether the reserve reflects an actual or a possible decline in value. If the former, it is truly a valuation reserve, but if the latter it is considered a surplus reserve inasmuch as it provides for a contingent loss.

Provision for loss in value of an asset may be accomplished by crediting the asset account, thus writing it down, or by crediting a reserve. The reserve thus set up by the latter method is called a "valuation" reserve, since both the asset account and the reserve

must be considered in determining the book value of the asset. Valuation reserves appear in corporate reports either on the asset side of the balance sheet as a deduction from the asset affected or on the liability side as a reserve. General Electric Company, for example, reported depreciation reserve for fixed assets as a deduction from the asset:

Fixed Assets.	
Plant and Equipment, at cost . . . . .	\$277,119 068
Less. Depreciation Reserve . . . . .	<u>238,217,080</u>
	\$ 38,901,988

DuPont & Company, on the other hand, reported as an asset "Plants and Properties, at approximately cost . . . \$486,858,137" and on the liability side "Reserve for Depreciation and Obsolescence . . . \$241,380,494." Hartford Electric Light Company in 1944 reported as an asset "Utility Plant . . . \$38,263,613" and on the liability side "Reserve for Depreciation of Utility Plant . . . \$11,051,426." The practice of crediting to a reserve instead of to the asset is preferable for two reasons: (a) the provision is an estimate which is more clearly indicated by crediting a reserve than by crediting the asset account, and (b) if a reserve is credited, the balance of the asset account represents the cost of the asset still in service, assuming, of course, that there are no fully depreciated assets still carried on the books.

**Liability reserves.** The purpose of a liability reserve is to provide for a definite liability that is fairly determinable in amount. The most common liability reserves are those set up for taxes, insurance, and pensions. Taxes represent a liability that will mature in a very short period. The uncertainty that sometimes exists, however, as to the exact amount of the taxes for which the company will be liable, has resulted in the use of the term "reserve for taxes" rather than "taxes accrued." Companies are frequently unable to compute their federal tax liability until some time after the close of the fiscal year. In like manner the assessment of local taxes may be debatable and subject to reduction upon appeal. Inasmuch as the reserve for current taxes represents an actual liability that will mature before the end of the next fiscal period, it is considered as a current debt and is included among the current liabilities.

Sometimes companies, in addition to providing for current taxes shown as a current liability, also create a reserve to provide for necessary adjustments of prior years' taxes. For example, National Dairy Products Corporation in 1944 provided \$33,080,000 for federal

income and excess profits taxes which it reported as a current liability, and at the same time it carried a reserve of \$6,986,312 for "Prior years' federal and state taxes" as a non-current liability.

A second type of liability reserve is a reserve for insurance. For instance, Anaconda Copper Mining Company reported:

Reserves.

For Workmen's Compensation Insurance . . . \$1,815,198

A company that provides for the payment of pensions to employees assumes an obligation the full burden of which should be borne not by the period during which the retirement occurs but by the periods that received the services of the employee. The usual practice is to build up a reserve for this purpose by an annual charge to expenses. DuPont & Company, for instance, reported:

Reserve for Pensions — including \$25,100,000 obligations to Trustee	
for funds borrowed from Pension Trusts . . . . .	\$52,104,124
Less: Cash held by Trustee of Pension Trusts . . . . .	20,643,915
Net . . . . .	\$31,460,209

Reserves for prior years' taxes, insurance, and pensions are usually reported in the section of the liability side of the balance sheet designated "Reserves."

**Surplus reserves.** Theoretically a surplus reserve is created to act as a buffer for poor years and for emergencies. As it reduces the surplus, it restrains the hope of the stockholders who regard surplus as a source of dividend distribution. Legally, surplus reserves are available for dividends, but from the standpoint of the company's financial report they are designated as unavailable. They may be returned to unappropriated earned surplus, however, at the discretion of the management and thus become available again for dividend distribution. Surplus reserves are created, as a matter of practice, after the charges establishing valuation and liability reserves have determined the profits available for such reservation.

Surplus reserves are sometimes designated for specific purposes. International Harvester Company, for example, reported:

Reserves:

Special Maintenance . . . . .	\$ 1,336,780
Development and Extension . . . . .	10,915,949
Post-War Rehabilitation and Contingencies . . . . .	30,000,000

The most common surplus reserve is for contingencies, and may be designated as "contingency reserve" or "general reserve." National Dairy Products Corporation in 1944 reported a "Reserve for Contingencies . . . \$10,000,000," which was established to

meet possible extraordinary charges arising during the war and postwar periods. Radio Corporation of America reported both a "Reserve for Contingencies . . . \$3,106,174" and a "General Reserve . . . \$5,441,301." General Electric Company for years has reported a "General Reserve." The company revealed in the 1943 report, however, that this reserve included capital surplus of \$8,311,-945.

Surplus reserves, especially of the optional type (reserve for contingencies), are usually associated with conservative financial management. This policy results in an increase in both the stockholders' investment and the creditors' margin of protection.

Corporate financial statements during the war period were criticized in some cases on the ground that net income was reported after the deduction of reserves for contingencies, reconversion of plants, or other postwar purposes and therefore was understated. The need for those reserves was the subject of extensive study by the Treasury Department, the Securities and Exchange Commission, and the American Institute of Accountants. All of those studies accepted postwar reserves in principle; the disagreement applied largely to the size of the reserve. Corporate managements sought to provide for the extraordinary expenses and losses which would inevitably arise in conversion to war work and which were proper charges against war earnings. The establishment of excessive reserves would provide no tax relief, since such reserves were not legal deductions for tax purposes but would become so only when the anticipated expenses or losses were actually incurred. The United States Steel Corporation, for example, established a reserve for "estimated additional costs arising out of war" which amounted to \$50,000,000 in 1942. The reserve was increased to \$95,359,091 by 1944. This reserve was protected by a fund which was designated as "cash and United States Government securities set aside for property additions and for expenditures arising out of war" and which amounted to \$196,000,000 in 1944. The theory underlying such provision was that when accrued war costs became actual outlays they would be met out of the reserve without affecting future working capital. In accordance with this policy the United States Steel Corporation charged this reserve with \$1,123,261 in 1943 and with \$3,517,648 in 1944.

**Analysis of reserves.** The valuation and the liability reserves command the attention of the investor because by their very nature those reserves are estimates. An underestimate or an overestimate

of the loss in value of an asset, or of the liability incurred, distorts the income statement and the balance sheet. An underestimate of the loss in value of the asset understates the expenses charged to the period, thus overstating the earnings for the period; at the same time, it overstates the balance-sheet value of the asset. An underestimate of the liability incurred also understates the expenses and overstates the earnings and, correspondingly, understates the liability reserve. By the same token, an overestimate of the loss in value of the asset overstates the expenses charged to the period, thus understating the earnings and, at the same time, understates the balance-sheet value of the asset. An overestimate of the liability incurred also overstates the expenses and understates the earnings and, correspondingly, overstates the liability reserve.

The investor is interested in the amount of and the changes in the reserve. Analysis of the reserve for depreciation of fixed assets reported by National Dairy Products Corporation revealed that while the charge to income for depreciation did not vary much from year to year, the net withdrawals increased by approximately \$2,000,000 in 1944.

	1944	1943	1942
Balance, January 1 . . . . .	\$55,881,229	\$53,568,154	\$51,312,486
Charged to Income . . . . .	8,663,118	8,931,094	9,233,488
Total . . . . .	<u>\$64,544,347</u>	<u>\$62,499,248</u>	<u>\$60,545,974</u>
Net Withdrawals . . . . .	8,625,944	6,618,019	6,977,820
Balance, December 31 . . . . .	<u>\$55,918,403</u>	<u>\$55,881,229</u>	<u>\$53,568,154</u>

The increase in net withdrawals implies an increase in the amount of assets fully depreciated or retired. Analysis of the reserve for doubtful accounts revealed that it increased not only in total amount but also relative to the receivables.

	1944	1943	1942
Balance, January 1 . . . . .	\$2,935,042	\$2,442,185	\$2,164,289
Net Charge to Income . . . . .	358,931	492,857	277,896
Balance, December 31 . . . . .	<u>\$3,293,973</u>	<u>\$2,935,042</u>	<u>\$2,442,185</u>
Reserve Receivables . . . . .	12.2%	11.2%	9.1%

Analysis of the reserve for contingencies showed no change in it since the charge to income of \$2,500,000 in 1943 which brought it to its 1944 size of \$10,000,000.

	1944	1943	1942
Balance, January 1 . . . . .	\$10,000,000	\$7,500,000	\$3,600,000
Net Charge to Income . . . . .	2,500,000	2,500,000	3,900,000
Balance, December 31 . . . . .	<u>\$10,000,000</u>	<u>\$10,000,000</u>	<u>\$7,500,000</u>

## Review Questions

1. Explain the calculation of net worth.
2. Discuss the component parts of net worth.
3. Name the classes of surplus.
4. Indicate the source and significance of earned surplus.
5. Define capital surplus and explain the sources.
6. Name the general uses of surplus.
7. Indicate in each of the following instances whether the charge is to earned surplus or to capital surplus: absorption of losses, payment of dividends, provision for specific capital uses, transfer of funds to capital stock.
8. Name the classes of surplus adjustments.
9. Name common debits to surplus and credits to surplus representing non-loss or gain items.
10. Name common debits to surplus and credits to surplus representing adjustments applicable to prior periods.
11. Discuss the significance of analyzing surplus adjustments.
12. Define a reserve and indicate its source.
13. Distinguish between legal, financial, and voluntary reasons for the establishment of reserves.
14. Explain the methods of creating reserves.
15. Distinguish between a reserve and a fund.
16. Name the classes of reserves.
17. Define a valuation reserve.
18. Indicate the assets involved in valuation reserves.
19. Describe the methods of reporting valuation reserves.
20. Define a liability reserve and indicate the usual reserves of this type.
21. Define a surplus reserve and indicate its purpose.
22. Describe the effect of a surplus reserve.
23. Discuss the relation of surplus reserves to valuation and liability reserves.
24. Discuss the relation of valuation and liability reserves to reported earnings.
25. Discuss the factors involved in the analysis of reserves.

## Assignment

- (a) Account for the following change in capital surplus:

	<i>This Year</i>	<i>Last Year</i>
Goodwill . . . . .	None	\$228,123,581
Capital Stock:		
No. of Shares . . . . .	31,708,457	31,708,457
Par Value . . . . .	\$15	\$25
Total Par Value . . . . .	\$475,626,855	\$792,711,425
Capital Surplus . . . . .	\$114,613,803	\$ 25,652,814

- (b) Account for the following change in the capital surplus of a company which sold 188,780 shares of common stock during "This Year" at \$60 a share:

	<i>This Year</i>	<i>Last Year</i>
Capital Stock:		
No. of Shares . . . . .	2,853,971	2,665,191
Par Value . . . . .	\$20	\$20
Total Par Value . . . . .	\$57,079,420	\$53,303,820
Capital Surplus . . . . .	\$23,428,705	\$15,877,505

(c) Account for the following changes in surplus:

	<i>This Year</i>	<i>Last Year</i>
Common Stock:		
No. of Shares . . . . .	2,250,921	2,250,021
Stated Value . . . . .	\$40	\$10
Total Stated Value . . . . .	\$90,036,840	\$22,500,210
Surplus:		
Paid-in . . . . .	None	\$28,617,861
P & L . . . . .	\$45,997,231	\$84,916,000

(d) Compute the net worth of an industrial company from the following data:

Current Liabilities . . . . .	\$ 17,859,900
Preferred Stock . . . . .	4,386,400
Reserves . . . . .	1,946,550
Common Stock . . . . .	70,303,037
Funded Debt . . . . .	3,500,000
Paid-in Surplus . . . . .	20,961,382
Total Assets . . . . .	127,718,522
Earned Surplus . . . . .	8,489,353
Minority Interest . . . . .	271,900

(e) Classify the following reserves: (1) insurance, (2) depreciation of plant and equipment, (3) general, (4) doubtful accounts, (5) special maintenance, (6) investments, (7) development and extension, (8) bad debts, (9) contingencies, (10) prior years' taxes.

(f) Determine the earned surplus at the end of the year from the following data.

Cash dividends paid during the year . . . . .	\$ 3,257,748
Net income for the year . . . . .	13,350,217
Earned surplus at beginning of year . . . . .	26,997,173
Stock dividend paid during year . . . . .	9,745,149

(g) Determine the surplus at the beginning of the year from the following data.

Dividends paid during the year . . . . .	\$ 4,487,040
Reserve no longer required against advances to subsidiaries . . . . .	358,765
Surplus at end of the year . . . . .	12,805,935
Excess tax provision in prior years . . . . .	233,506
Net income for the year . . . . .	5,389,581

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## CHAPTER SIXTEEN

### WORKING CAPITAL

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**Introduction.** The solvency of a company depends upon its working capital position, that is, its ability to pay the current debts as they mature. Measurement of the ability to meet the current debts as they mature involves consideration of the current liabilities and the current assets. Current liabilities are debts which will become payable within one year from the date of the balance sheet. Current assets are those assets which, in the normal operations of the business, are converted into cash. The capital invested in the current assets may be obtained from (a) the creation of current liabilities including short-term borrowing, (b) the issuance of long-term liabilities such as notes and bonds, (c) the sale of capital stock, or (d) profits which have been retained in the business. This capital circulates within the group of current assets — from cash to inventories, to receivables and back to cash. In a subsequent balance sheet the current inventories will have become cash and receivables while the present receivables will have become cash.

**Working capital.** The excess of current assets over the current liabilities is called the working capital. For example, a company with current liabilities of \$4,000,000 and current assets of \$10,000,000 will need to use \$4,000,000 of the current assets to satisfy the current liabilities, leaving \$6,000,000 of current assets or working capital free for other uses within the business.

*Railroad and public utility companies.* Analysis of the working capital position of railroad and public utility companies is not particularly important because of the peculiar position of companies in those fields. The New York Central Railroad reported an excess of current liabilities over current assets of \$51,929,390 in 1933, of \$41,975,704 in 1934, and of \$45,786,735 in 1935. The Jamaica Water Supply Company of Long Island, New York, reported a net profit of \$2.77 a share on its common stock in 1944, although its



current liabilities of \$540,147 exceeded its current assets of \$449,301 by \$90,846.

Railroad and public utility companies are not faced with the problem of financing inventory or receivables. They sell a service rather than a product. Inventory consists primarily of materials and supplies which are used in the maintenance of the operating assets or in the construction of additions and betterments. No value appears on the books of railroads for available transportation service or on the books of public utilities for water impounded in reservoirs, or gas in storage or electricity which is generated for immediate use. Receivables also are relatively unimportant, since they are collected readily. Public utility companies have the right, and in some instances are required by the regulatory body, to discontinue service to customers who do not pay promptly. The receipt of revenues more or less regularly and in cash assures them of a fairly steady flow of funds to meet current bills. In addition, the holdings of marketable securities give them a secondary reserve which can be readily turned into cash. Furthermore, they are in a position to readily fund their unfunded debt through the sale of bonds. It has been customary to provide for expansion through new financing rather than from profits. A prosperous public utility may at times permit its current liabilities to exceed its current assets, planning to replenish its working capital by a new financing program. In the determination of rates in the public utility field, commissions view the working capital needs of the company as the amount reasonable or necessary rather than the actual amount reflected in the balance sheet.

Analysis of the working capital position of a railroad or a public utility company is usually restricted to a consideration of cash on the one hand and fixed charges and near-term bond maturities on the other. The Chesapeake & Ohio Railway in 1944 had cash of \$25,509,775, which was ample to meet fixed charges of \$7,115,784. The company faced small near-term bond maturities amounting to \$2,745,000 in 1945, to \$600,000 in 1946, and to \$1,684,000 in 1948. The first sizable maturity was \$80,204,000 due in 1992. Similarly, Hartford Electric Light Company had \$621,330, exclusive of tax notes, in cash in 1944 compared to \$264,748 in fixed charges and no bond maturity prior to 1967.

*Industrial companies.* Analysis of the working capital position of an industrial company, however, is most important. Insufficient working capital may result in slow payment of bills with resulting

poor credit rating, in curtailment of operations, and in general inability to progress. The most common reason for the failure of industrial companies is inadequate working capital. Insufficient working capital presents the danger of insolvency. Insolvency, in turn, may be technical or actual. A business is technically insolvent when it is unable to meet its obligations as they become due in the usual course of operations. Its immediate difficulty is the excess of maturing obligations over the ready means to meet them. On the other hand, a business is actually insolvent when the total assets are insufficient to meet the total liabilities in full. Actual insolvency, however, is usually preceded by technical insolvency.

**Causes of inadequate working capital.** Inadequate working capital may arise from either an actual reduction in working capital or an inadequate growth of working capital. A reduction in working capital is commonly caused by the payment of unearned interest and dividends, the absorption of operating losses, or the transfer of current funds to fixed assets. During the period 1933-1938, for example, American Tobacco Company paid a total of \$20,000,000 of cash dividends in excess of earnings which, together with the rise in inventory investment, made it necessary to increase funded debt by approximately \$19,000,000, and bank borrowings by about \$28,000,000. Most of the gross revenues of International Business Machines Corporation come from the leasing of electrically operated machines and auxiliary equipment which mechanically sort, tabulate, and compile statistical data by the use of punched cards. Those machines and the equipment when leased are transferred on the books of the company from inventory to fixed asset account. The outlays to build the machines are a heavy burden on working capital which must be replenished from time to time. The company has obtained some of the working capital from current earnings by paying dividends partly in cash and partly in stock. It was necessary, however, for the company to raise additional working capital by the sale of debentures in 1936 and again in 1937.

It is equally important that working capital increase with an expanding volume of business. For example, the marked rise in sales of Montgomery Ward & Company during the period 1936-1940 made it necessary for the company to raise additional working capital through the sale of stock and the retention of earnings. In 1936, out of an estimated \$25,890,000 net proceeds from the sale of common stock, \$10,000,000 was used to reimburse the treasury for common dividends paid out of 1936 earnings and \$15,890,000

was added to working capital. In 1940 the company faced the problem of financing a \$32,000,000 increase in receivables and inventory, which it accomplished in part by the retention of a substantial portion of the profits.

A company whose working capital is insufficient, therefore, must bring new funds into the business either from such permanent sources as the stockholders, through the sale of additional stock, or from long-term creditors, through the sale of bonds, or it must pay off the current liabilities through the liquidation of assets, which may curtail or even halt operations.

**Measurement of working capital.** The working capital of a company is measured by the excess of current assets over current liabilities. The working capital of National Dairy Products Corporation, for example, was \$83,911,472 in 1944, compared to \$76,593,868 in 1943 and \$64,691,633 in 1942 — an increase of \$7,317,604 over 1943 and of \$19,219,839 over 1942.

	1944	1943	1942
Current Assets . . . . .	\$113,799,289	\$104,891,867	\$91,265,730
Current Liabilities . . . . .	29,887,817	28,297,999	26,574,097
Working Capital . . . . .	\$ 83,911,472	\$ 76,593,868	\$64,691,633

**Working capital turnover.** The productivity of the working capital is measured by the working capital turnover ratio: "Net sales/working capital." This ratio shows the number of times the working capital has reproduced itself in sales. National Dairy Products Corporation, for example, reported net sales of \$593,852,943 in 1944 and working capital of \$83,911,472. The working capital was turned over 7.08 times ( $\$593,852,943/\$83,911,472$ ). This compares with 7.57 times in 1943 and 8.69 times in 1942. The larger the turnover, the greater is the volume of sales per dollar of working capital; and, conversely, the lower the turnover, the smaller is the volume of sales per dollar of working capital. For example, in the instance of National Dairy Products Corporation, the turnover of 7.08 times in 1944, 7.57 times in 1943, and 8.69 times in 1942 meant that in 1944 the company obtained \$7.08 of net sales per dollar of working capital against \$7.57 in 1943 and \$8.69 in 1942. The slowing down in the turnover meant that the company was securing a decreasing number of dollars of net sales per dollar of working capital.

**Working capital position.** The proper amount of working capital required by a particular company depends upon both the volume and the character of its business. The mere statement of \$83,911,472

of working capital for National Dairy Products Corporation in 1944, however, was no indication of adequacy or inadequacy of working capital, since there is no criterion by which to judge. For example, in the following illustration, Company A has working capital of \$3,000,000 while Company B has only \$1,000,000. The working capital position of a company, however, refers to its ability to meet current liabilities. The measurement of this ability is afforded not by the amount of working capital but by a comparison of the amount of current assets available to meet the current liabilities. In relation to current liabilities, Company A has only \$1.50

	<i>Company A</i>	<i>Company B</i>
Current Assets . . . . .	\$9,000,000	\$1,500,000
Current Liabilities . . . . .	6,000,000	500,000
Working Capital . . . . .	<u>\$3,000,000</u>	<u>\$1,000,000</u>

of current assets for each dollar of current liabilities, whereas Company B has \$3 of current assets per dollar of current liabilities. Obviously, Company B has the stronger working capital position.

**Current ratio.** The more common method of measuring the working capital position of a company is by the current ratio "Current assets/current liabilities." For National Dairy Products Corporation in 1944, the current ratio was 3.8 to 1 (\$113,799,289/\$29,887,817). It was 3.7 in 1943 and 3.4 in 1942. The current ratio expresses the number of times the current assets could satisfy the current liabilities. It is known as a solvency ratio. The current assets of National Dairy Products Corporation in 1944 were sufficient to satisfy the current liabilities 3.8 times.

The usual minimum standard is 2 to 1; that is, the current assets should be at least twice the current liabilities, on the theory that the stockholders should have an investment in the current assets at least equal to that provided by the current creditors. For example, in the following situation, with a current ratio of 2 to 1, the current creditors have supplied \$45,250,000 or 50 per cent and the stockholders \$45,250,000 or 50 per cent of the working capital invested

Current Assets . . . . .	\$90,500,000
Current Liabilities . . . . .	<u>45,250,000</u>
Working Capital . . . . .	\$45,250,000
Current Ratio . . . . .	2 to 1

in current assets. If the ratio is less than 2 to 1, the creditors are supplying more working capital than the stockholders. For example, in the following case, the creditors are providing 56 per cent

(\$30,000,000) and the stockholders only 44 per cent (\$23,500,000) of the total current assets.

Current Assets . . . . .	\$53,500,000
Current Liabilities . . . . .	<u>30,000,000</u>
Working Capital . . . . .	\$23,500,000
Current Ratio . . . . .	1 8 to 1

On the other hand, a ratio of 3 to 1 means that the stockholders are providing more of the working capital than the creditors. Thus in the following illustration the stockholders are providing 67 per cent (\$14,000,000) and the creditors 33 per cent (\$7,000,000) of the total current assets.

Current Assets . . . . .	\$21,000,000
Current Liabilities . . . . .	<u>7,000,000</u>
Working Capital . . . . .	\$14,000,000
Current Ratio . . . . .	3 to 1

*Significance of current ratio.* The current ratio, it should be noted, assumes that the current assets will be used to satisfy the current liabilities and that the liquidation of the current assets will yield, in cash, the total amount stated in the balance sheet. This assumption, however, is not fully justified. While it is true that current liabilities represent an actual debt and may be considered as expressed in non-shrinkable dollars, it is equally true that the current assets, on the other hand, are subject to diminution in actual liquidation and may be considered as expressed in shrinkable dollars. What constitutes a satisfactory current ratio varies with the type of business. In general, the more liquid the current assets, the less is the margin needed above the current liabilities. The strength of the working capital position, however, can be determined only by careful analysis of the current liabilities and the current assets.

**Current liabilities.** Current liabilities include notes payable, accounts payable, accrued expenses, dividends payable, deferred income, and currently due funded debt.

*Notes payable.* Notes payable consist of notes given to trade creditors or to banks or sold for cash through commercial paper houses. The presence of notes payable, particularly to banks, is not necessarily an indication of weakness. Seasonal borrowings which are fully paid off after the close of the active sales period are normal from the standpoint of both the company and the bank. If the amount of notes payable is substantially less than the cash and marketable securities, the liability offers no great cause for concern. If, however, the bank borrowings are larger than the

aggregate of cash and receivables, it may indicate that the company is relying heavily on the banks. Unless the inventory is of an unusually liquid character, the working capital position of the company is weak. More or less permanent bank loans may indicate that the company is in need of long-term capital which should be obtained from the sale of bonds or stock. The sales of American Tobacco Company, for instance, increased from \$242,600,000 in 1937 to \$529,400,000 in 1943; during the same period inventory increased from \$137,400,000 to \$236,200,000. The company sought to finance the rising volume of sales and inventory by short-term borrowing, as evidenced by the increase in notes payable from \$23,400,000 in 1937 to \$87,900,000 in 1941. During the period 1939-1941 notes

AMERICAN TOBACCO COMPANY  
(00,000)

	<i>Sales</i>	<i>Inventory</i>	<i>Funded Debt</i>	<i>Notes Payable</i>	<i>Cash and Receivables</i>
1937 . . .	\$242 6	\$137 4	\$ 19 5	\$23.4	\$34 5
1938 . . .	253 1	144 6	19.5	28 7	29 0
1939 . . .	270.9	151 8	17 7	42 0	29 4
1940 . . .	309 3	157 7	15 8	42 9	28.8
1941 . . .	363.5	202.3	13 9	87 9	39 7
1942 . . .	442 2	229 4	100 9	10.0	38 7
1943 . . .	529.4	236 2	97.9	16 1	41 8
1944 . . .	533.4	260 8	189.0	—	89 9

payable exceeded cash and receivables. In 1942, however, the company funded the greater part of the unfunded debt by issuing \$100,000,000 of bonds. As a result, notes payable were reduced to \$10,000,000 in 1942.

*Accounts payable.* Accounts payable are debts owed to trade creditors, usually for the purchase of inventory.

*Accrued expenses.* Accrued expenses include salaries and wages, taxes, interest, and other accruals. Accrued expenses, however, differ from accounts and notes payable in one important respect. The latter are the result of business transactions which have been entered on the books of account. An account payable is shown only when a purchase has been made and the invoice received; a note payable is recorded only when a promissory note has been given or a time draft drawn by a creditor has been accepted. An accrued expense, on the other hand, anticipates an approaching payment, such as taxes, wages, or interest. It represents an attempt to determine the amount for which the period just closed should be charged for the future obligation.

*Dividends payable.* Dividends payable represent dividends which have been declared but not yet paid. A dividend, once properly declared, becomes an obligation as much as any debt.

*Deferred income.* Deferred income is income received before it is earned. It should be classed as a current liability if current assets will have to be used in earning it. If, on the other hand, all that is required to earn it is simply the lapse of time, it should be excluded from current liabilities, since it will not drain on current assets.

*Bonds payable.* A bond due within one year from the date of the balance sheet should also be classed as a current liability unless special provision for liquidating it has been made either by a sinking fund or a refunding operation.

*Federal taxes.* The current liabilities should also include provision for federal income taxes. Many corporations, in anticipation of this liability, have purchased United States Treasury Tax Notes, which may be used as payment for federal taxes. The purchase of Series B and C of those notes enables large taxpayers to provide in advance during the current year for the payment of tax bills due the next year.<sup>1</sup> There is no uniform practice among corporations, however, in the manner of reporting the purchase of the notes. Some corporations report them as a current asset; others show them as a deduction from the accrued tax liability. International Harvester Company, for example, reported tax notes as an asset:

Current Assets:

Cash . . . . .		\$ 51,485,640
Marketable Securities — at cost:		
U. S. Treasury Tax Notes . . . . .	\$35,000,000	
Other U. S. Gov't Obligations . . . . .	87,172,693	
Other Marketable Securities . . . . .	<u>34,630</u>	122,207,323
Receivables . . . . .		71,890,128
Inventories . . . . .		<u>142,151,208</u>
Total Current Assets . . . . .		\$387,734,299

National Dairy Products Corporation, on the other hand, reported tax notes as a deduction from the tax liability in 1944:

Current Liabilities:

Serial Debentures maturing within one year . . . . .	\$ 1,500,000
Accounts Payable . . . . .	20,909,369
Accrued Liabilities . . . . .	7,478,448
Provision for Federal Income and Excess Profits Taxes . . . . .	<u>\$33,080,000</u>
Less: U. S. Treasury Tax Notes Series C . . . . .	<u>33,080,000</u>
Total Current Liabilities . . . . .	\$29,887,817

<sup>1</sup> Series C Notes are also adaptable for the temporary or short-term investment of idle cash balances.

Inasmuch as the tax notes are earmarked to meet a specific current liability — federal taxes — they should more properly appear as a deduction from the tax liability in the current liabilities.

**Liquidity of current assets.** The current creditors must look to the current assets as the source of payment of their debts. Inasmuch as cash is the accepted medium of payment of debts, the current assets should be valued on the basis of the amount of cash which it is expected they will produce in the regular course of business and which, therefore, will become available for the payment of current debts. The basic question is: How rapidly will cash be obtained from the current assets in order to meet the current liabilities?

The current assets as reported by National Dairy Products Corporation were:

	1944	1943	1942
Cash . . . . .	\$26,920,548	\$18,569,660	\$17,027,644
U. S Gov't Securities . . . . .	18,425,741	11,197,660	
Receivables —			
Notes Receivable . . . . .	*	291,156	489,915
Accounts Receivable . . . . .	*	25,516,790	25,780,451
	<u>\$26,874,682</u>	<u>\$25,807,946</u>	<u>\$26,270,366</u>
Less: Reserves for Doubtful Notes & Accounts . . . . .	3,293,973	2,933,042	2,442,185
	<u>\$23,580,709</u>	<u>\$22,872,904</u>	<u>\$23,828,181</u>
Inventories, at cost (generally average cost) or market, whichever is lower. Products & Materials . . . . .	37,089,533	42,909,674	42,437,807
Supplies . . . . .	7,782,758	9,341,969	7,972,098
	<u>\$44,872,291</u>	<u>\$52,251,643</u>	<u>\$50,409,905</u>
Total Current Assets . . . . .	<u>\$113,799,289</u>	<u>\$104,891,867</u>	<u>\$91,265,730</u>

\* Not broken down

**Cash.** Cash refers to cash on hand and in banks. In the instance of National Dairy Products Corporation, cash represented 23.6 per cent of the total current assets in 1944 as against 17.7 per cent in 1943.

**Marketable securities.** Marketable securities consist of those investments which from their origin and intended use have three characteristics: (a) they are purchased for holding during a relatively short term, (b) they have a high degree of price stability, and (c) they are readily marketable. They usually consist primarily of federal, state, and municipal obligations. They represent temporary investment of excess cash built up as a secondary resource of cash to be drawn upon when needed. Marketable securities are carried at the lower of cost or market value.



**Receivables.** Receivables are ordinarily placed after cash and marketable securities in corporate balance sheets on the theory that, of the remaining current assets, they are the most readily convertible into cash. The problem in the valuation of receivables is to determine the amount of cash that will probably be realized when the claims they represent are settled and that, therefore, will be available for the payment of current debts. Receivables may be classed as accounts and notes.<sup>2</sup> Accounts receivable represent amounts owing from customers for the sale of goods or services and are not evidenced by negotiable instruments. Notes receivable, on the other hand, are negotiable instruments and represent a definite settlement with respect to amount and date of payment. A note receivable is generally considered superior to an open-book account, since it lends itself more readily to the legal requirements necessary to collection by law.

*Origin of notes receivable.* The origin of the note, however, is very important. A note may arise from an overdue account or from trade practice. Obviously, if it arises after the account has become due, it represents an extension of the original credit period and hence is an inferior asset. On the other hand, if given at the time of sale, it is usually in accordance with trade practice. Certain lines of business, such as agricultural machinery, lumber, furs, and jewelry, customarily take notes. International Harvester Company, for example, reports each year as a current asset "notes of dealers, farmers, and motor truck users, etc." which aggregated as much as \$117,766,271 in 1937, \$106,709,057 in 1938, and \$105,357,585 in 1941.

INTERNATIONAL HARVESTER COMPANY			
	1937	1938	1941
Receivables:			
Notes . . . . .	\$117,766,271	\$106,709,057	\$105,357,585
Accounts . . . . .	24,231,603	19,514,161	23,082,519
	<u>\$141,997,874</u>	<u>\$126,223,218</u>	<u>\$128,440,104</u>

The importance of notes is evidenced by the fact that they represented 82.9 per cent of total receivables in 1937, 84.5 per cent in 1938, and 82.0 per cent in 1941.

In general, the note is limited to businesses either dealing in commodities of large unit value or granting long-term credit. The investor, of course, must determine from trade practice whether

<sup>2</sup> The Securities and Exchange Commission requires notes and accounts receivable to be shown separately in financial statements filed with it.

notes should properly be expected in the current assets. In instances where their use is unusual, it may be assumed that they represent either overdue accounts converted into notes or special credits outside of regular trade, such as notes from officers or employees. In such cases they represent an undesirable asset and are of doubtful maturity and liquidity.

*Valuation of receivables.* The chief problem in valuing the notes and accounts receivable is usually that of estimating the bad debts or the amount that may not be collected. In order, therefore, for the company to state the cash realizable value of those assets at the end of the fiscal year, it is necessary for it to estimate the amount that probably will not be collected. For example, International Harvester Company set up a reserve for losses of \$23,498,149 in

#### INTERNATIONAL HARVESTER COMPANY

	1937	1938	1941
Total Receivables . . . . .	\$141,997,874	\$126,223,218	\$128,440,104
Reserve for Losses . . . . .	23,498,149	25,100,720	21,349,086
Net Receivables . . . . .	<u>\$118,499,725</u>	<u>\$101,122,498</u>	<u>\$107,091,018</u>

1937, of \$25,100,720 in 1938, and of \$21,349,086 in 1941, and thus estimated the current value of the receivables at \$118,499,725 in 1937, at \$101,122,498 in 1938, and at \$107,091,018 in 1941. As a result of this estimate, the claims against customers are more correctly valued for the balance sheet and the loss is charged to the period in which the sale is effected instead of the period in which failure to collect is experienced. This charge appears in the income statement as a deduction from income and in the balance sheet as an addition to the reserve for doubtful accounts. In 1944, for example, National Dairy Products Corporation provided a reserve of \$3,293,973 for losses on receivables, which aggregated \$26,874,682.

*Receivables/current assets.* The percentage of total current assets in the form of receivables is influenced by the nature of the industry. The amount of working capital invested in receivables depends upon (a) the volume of business and the credit terms allowed customers and (b) the effectiveness of the collection system. The longer the terms of credit allowed customers or the slower the collection of receivables, the greater is the necessary investment of working capital in receivables; conversely, short terms of credit or rapid collections reduce the amount of working capital tied up in receivables. Receivables represent a high percentage in agricultural machinery companies and a small percentage in variety stores and

the cigarette division of the tobacco industry. Receivables represented 20.7 per cent of total current assets for National Dairy Products Corporation in 1944, compared to 21.8 per cent in 1943 and 26.0 per cent in 1942.

A high current ratio is not necessarily an indication of a strong working capital position. It may simply reflect an increase in receivables due either to poor collections or to a more liberal credit policy. The extent to which receivables affect the liquidity of the current ratio may be tested by "Receivables/net sales" and "Net sales/receivables."

*Receivables/net sales.* In general, a high percentage of receivables to net sales is to be expected in companies that sell on a long-term credit basis, whereas a low percentage will be found in companies that sell on a short-term or cash basis. The application of "Receivables/net sales" in the analysis of an individual company, however, is for the purpose of determining to what extent the company is tying up working capital in receivables as a result of either a change in credit terms or a poor collection policy. If the increase in the current ratio has been due to increased receivables, the question arises: Has the increase in receivables been due to increased volume of sales or to slower collections? Assume the following situation:

	1945	1944
Net Sales . . . . .	\$50,000,000	\$50,000,000
Current Assets:		
Cash . . . . .	5,000,000	5,000,000
Receivables . . . . .	10,000,000	5,000,000
Inventory . . . . .	10,000,000	10,000,000
Total . . . . .	<u>\$25,000,000</u>	<u>\$20,000,000</u>
Current Liabilities . . . . .	10,000,000	10,000,000
Current Ratio . . . . .	2 5	2 0
Receivables/Net Sales . . . . .	20%	10%

In this instance the current ratio has increased solely because of the increase of \$5,000,000 in receivables. The increase in receivables, however, has not been due to an increase in net sales, as evidenced by the fact that receivables rose from 10 per cent of net sales in 1944 to 20 per cent in 1945. Relative to sales, an increasing amount of working capital has been tied up in receivables. In like fashion, the increase in current ratio of National Dairy Products Corporation in 1943 was not due to increased receivables; on the contrary, receivables decreased not only in total but relative to net sales. On the other hand, the further improvement in the current ratio in 1944 was offset, in part, by the increase in receivables both in total and relative to sales.

## NATIONAL DAIRY PRODUCTS CORPORATION

	1944	1943	1942
Current Ratio . . . . .	3 8	3 7	3.4
Receivables . . . . .	\$26,874,682	\$25,807,946	\$26,270,366
Receivables/Net Sales . . . . .	4 5%	4 4%	4.9%

*Net sales/receivables.* The "Net sales/receivables" is known as the receivables turnover and is designed to determine the number of times receivables have turned over during the year. It is a velocity relationship and tests the liquidity of receivables. Obviously, the more rapid the turnover, the larger is the volume of receivables which a given amount of working capital is supporting. In the instance of National Dairy Products Corporation in 1944, with net sales of \$593,852,943 and receivables of \$26,874,682, the turnover was 22.0 times, compared to 22.5 times in 1943 and 21.4 times in 1942.

## NATIONAL DAIRY PRODUCTS CORPORATION

	1944	1943	1942
Net Sales . . . . .	\$593,852,943	\$580,173,068	\$562,451,639
Receivables . . . . .	26,874,682	25,807,946	26,270,366
Net Sales/Receivables . . . . .	22 0	22 5	21 4

To learn from the turnover figure the average length of time the receivables were outstanding, it is the common practice to divide 365 days by the turnover. Thus, in the instance of National Dairy Products Corporation, with a turnover in 1944 of 22.0 times, receivables were outstanding an average of 16.6 days, compared to 16.2 days in 1943 and 17.0 days in 1942. This ratio may also be computed as "Receivables/average daily sales." In the instance of National Dairy Products Corporation in 1944, average daily sales amounted to \$1,626,994 (\$593,852,943/365). Hence, with receivables of \$26,874,682 and average daily sales of \$1,626,994, receivables were outstanding an average of 16.6 days (\$26,874,682/\$1,626,994). The lower this ratio, especially with respect to the usual credit terms, the less likely is the receivables account to contain old and valueless accounts. Naturally, the more promptly the customers pay, the less is the risk incurred from bad debts, the lower is the collection expense, and the more liquid is the asset. On the other hand, a ratio which is high relative to the usual credit terms reflects an unfavorable situation. In such instance greater allowance must be made for loss of value in liquidation.

**Inventory.** Though inventory is an asset and a source of profit, a large inventory may create several problems. It may require

substantial bank borrowings to finance it, or it may absorb an undue amount of cash. It may also lead to heavy losses in the event of a decline in commodity prices. Inventory presents a problem of valuation which is entirely different from that of cash and receivables. Cash and receivables represent actual cash on hand or bona fide claims for the receipt of cash. Inventory, on the other hand, must be sold before it can be regarded as available for the payment of current debt. In addition, cash and receivables are claims to definite amounts of money, whereas inventory is subject to changes in market value.

*Nature of inventory.* Inventory may be divided into raw materials, work in process, finished goods, and supplies. Some companies report the inventory in this fashion, but the asset is usually reported as one item. United States Rubber Company, for example, reported inventory as follows:

Finished Goods . . . . .	\$26,126,081
Goods in Process of Manufacture . . . . .	1,440,677
Raw Materials . . . . .	37,242,287
Supplies . . . . .	3,318,585
Total Inventory . . . . .	<u>\$68,127,630</u>

International Harvester Company, on the other hand, reported inventory as one item: "Inventories . . . \$151,378,843." National Dairy Products Corporation reported:

	1944	1943
Inventories, at cost (generally average cost) or market, whichever is lower —		
Products and Materials . . . . .	\$37,089,533	\$42,909,674
Supplies . . . . .	7,782,758	9,341,969
	<u>\$44,872,291</u>	<u>\$52,251,643</u>

*Inventory valuation.* Inventory is usually valued at the lower of cost or market. The investor should determine the basis used in the balance sheet in valuing inventory. Most balance sheets indicate the basis. Cost refers to the cost to the company (purchase price, duties, freight, etc.) whereas market means the price at which identical goods, in the quantity of the normal order, can be bought or manufactured at prices and costs prevailing as of the statement date. The rule of "cost or market, whichever is lower" is based on the principle of providing for all losses and anticipating no profits. It presumes that a decline in market values for purchases will be followed by a decline in the selling prices of inventory. The reduction of the inventory to market purchase price permits charging the loss to the period during which the price declined and trans-

ferring the goods to the next period at a price at which they can presumably be sold. The "cost or market" rule has the twofold objective of not showing an unrealized profit when inventory has a market value in excess of cost and of not showing an inflated value of inventory when cost is in excess of market value at the date of the balance sheet.

*Cost of inventory.* Two common methods of determining the cost of inventory are the "first-in, first-out" and the "last-in, first-out" methods. The "first-in, first-out" method assumes that all sales have been made from the earliest purchases. The inventory on hand at the end of the year, therefore, is prorated back over the most recent purchases and their actual cost determined. For example, assume that the inventory on hand at the end of the year contains 10,000 units and the record of most recent purchases is:

Oct 15	4,000 units at \$2.00		\$8,000
Nov 24	3,000 units at \$1.75		5,250
Dec. 1	2,000 units at \$1.50		3,000
Dec. 28	5,000 units at \$1.80		9,000

On a "first-in, first-out" basis, the cost of the inventory would be \$17,250, computed as follows:

5,000 units at \$1.80	\$9,000
2,000 units at \$1.50	3,000
3,000 units at \$1.75	5,250
	<u>\$17,250</u>

The "last-in, first-out" method assumes that all sales have been made from the most recent purchases. The goods on hand at the end of the year, therefore, are prorated back over the earlier purchases and their actual cost determined. In the above case the cost of inventory would be \$18,050, computed as follows:

4,000 units at \$2.00	\$8,000
3,000 units at \$1.75	5,250
2,000 units at \$1.50	3,000
1,000 units at \$1.80	1,800
	<u>\$18,050</u>

While a discussion of the relative merits of the two methods of determining cost of inventory has no place in this book, a change by the company from one method to the other is significant to the investor when comparing the results of the two years in which the change happened. For example, as of January 1, 1941, Swift & Company adopted the "last-in, first-out" method, as a result of which the value of inventory at the close of the fiscal year, Novem-

ber 1, 1941, was \$20,650,347 less than it would have been under the previous method of determining cost and net profits after federal income and excess profits taxes were approximately \$7,000,000 less.

If inventory is valued at cost, which is higher than market value, but if a reserve has been set up equal to the difference, the reserve should be deducted from the cost valuation in preparing the statement of working capital.

*Inventory/current assets.* The nature of the industry influences the percentage of current assets in the form of inventory. A high percentage is found in the cigarette division of the tobacco industry and in the leather industry, whereas a small percentage is found in the dairy products and chemical industries. National Dairy Products Corporation's inventory was 39.4 per cent of total current assets in 1944, compared to 49.8 per cent in 1943 and 46.2 per cent in 1942.

*Inventory/net sales.* The extent to which inventory affects the liquidity of the current ratio may be tested by "Inventory/net sales" and by "Net sales/inventory." The purpose of "Inventory/net sales" is to determine to what extent the company is tying up more or less working capital in inventory. If the increase in the current ratio has been due to increased inventory, the question arises: Has the increase in inventory been due to increased volume of sales or to overstocking of inventory? In the situation shown here, the current ratio has increased from 2.4 to 3.0. The increase

	1945	1944
Net Sales . . . . .	\$50,000,000	\$50,000,000
Current Assets:		
Cash . . . . .	2,000,000	2,000,000
Receivables . . . . .	5,000,000	5,000,000
Inventory . . . . .	8,000,000	5,000,000
Total . . . . .	<u>\$15,000,000</u>	<u>\$12,000,000</u>
Current Liabilities . . . . .	5,000,000	5,000,000
Current Ratio . . . . .	3.0	2.4
Inventory/Net Sales . . . . .	16%	10%

in the current ratio has been due solely to the increase in inventory. Relative to net sales, however, inventory has increased from 10 per cent to 16 per cent.

In the instance of National Dairy Products Corporation, the current ratio in 1944 was 3.8, compared to 3.7 in 1943 and 3.4 in 1942.

	1944	1943	1942
Net Sales . . . . .	\$593,852,943	\$580,173,068	\$562,451,639
Inventory . . . . .	44,872,291	52,251,643	50,409,905
Current Ratio . . . . .	3.8	3.7	3.4
Inventory/Net Sales . . . . .	7.5%	9.0%	8.9%

The rise in the current ratio in 1944 was not caused by an increase in inventory — which, in fact, decreased both in amount and relative to sales.

*Net sales/inventory.* The inventory turnover “Net sales/inventory” is a velocity relationship which seeks to determine how often raw materials and finished goods have been converted into sales during the year. Though the inventory turnover is more accurately measured by the ratio “Cost of goods sold/inventory,” the fact that most corporate reports do not state “Cost of goods sold” makes it necessary for practical purposes to use “Net sales.” The inventory turnover is significant for three reasons. One, an opportunity for a profit arises every time a dollar of capital invested in inventory is turned over through sale, and hence the more rapid the rate of turnover, the greater are the profit possibilities. Two, the more rapid the turnover, the less is the capital invested in inventory and, as a result, there is less chance of loss through obsolete material. Three, the more rapidly the inventory is turned over, the more closely it approaches a cash position and the lower is the current ratio upon which the company can safely operate. On the other hand, the lower the rate of turnover, the greater is the current ratio required for safe operation.

National Dairy Products Corporation, for example, had net sales in 1944 of \$593,852,943 and inventory of \$44,872,291; the inventory turned over 13.2 times (\$593,852,943/\$44,872,291). This compares with a turnover of 11.0 times in 1943 and 11.1 times in 1942.

	1944	1943	1942
Net Sales . . . . .	\$593,852,943	\$580,173,068	\$562,451,639
Inventory . . . . .	44,872,291	52,251,643	50,409,905
Net Sales/Inventory . . . . .	13.2	11.0	11.1

**Liquidity of current position.** The liquidity of the current position may be further tested by three supplementary ratios: “Quick ratio,” “Cash and marketable securities/current liabilities,” and “Cash/current liabilities.”

*Quick ratio.* On the theory that inventory is the least liquidable current asset, the quick ratio eliminates it in considering the current assets available to satisfy the current liabilities. The ratio is calculated as “Cash, marketable securities, and receivables/current liabilities.” This ratio is frequently referred to as the “acid test” and seeks to present an estimate of the immediate ability of the company to satisfy current liabilities. It is based on the assumption that in an emergency cash may be obtained readily by hypothe-



cating the receivables and by selling the marketable securities. The quick ratio for National Dairy Products Corporation in 1944 was 2.3 times (\$68,926,998/\$29,887,817), computed as follows:

Cash . . . . .	\$26,920,548
Marketable Securities . . . . .	18,425,741
Receivables . . . . .	23,580,709
Total Quick Assets . . . . .	<u>\$68,926,998</u>

The quick current assets could satisfy the current liabilities 2.3 times, which compared with 1.8 times in 1943 and 1.5 times in 1942.

*Cash basis.* The other two ratios seek to measure the liquidity of the current ratio on a purely cash basis. In the instance of National Dairy Products Corporation in 1944, the test of "Cash and marketable securities/current liabilities" revealed a ratio of 1.4 times in 1944, compared to 1.0 times in 1943 and 0.6 times in 1942. The test of "Cash/current liabilities" showed a ratio of 0.9 times in 1944 and 0.6 times in both 1943 and 1942.

### Review Questions

1. Define solvency and explain the factors involved.
2. Discuss the relative importance of adequate working capital to railroad and public utility companies on the one hand and to industrial companies on the other.
3. Distinguish between technical and actual insolvency.
4. Discuss the causes of inadequate working capital.
5. Explain the remedies for inadequate working capital.
6. Indicate the calculation of working capital.
7. Explain the calculation and significance of working capital turnover.
8. Comment on the analytical value of stating working capital in dollars and indicate the proper statement of working capital.
9. Explain the calculation and significance of current ratio.
10. Explain the theory underlying the 2-to-1 minimum current ratio.
11. Discuss the limitations to the analytical use of current ratio.
12. Indicate the nature of current liabilities.
13. Distinguish between accounts payable and notes payable.
14. Indicate the nature of accrued expenses.
15. Contrast accrued expenses with accounts and notes payable.
16. Comment on dividends payable, deferred income, and currently due funded debt as current liabilities.
17. Discuss the methods of reporting United States Treasury Tax Notes as an offset to provision for federal taxes.
18. Discuss the problem of liquidity of current assets.
19. Indicate the nature of current assets.
20. Discuss the characteristics, nature, function, and valuation of marketable securities.

21. Indicate the relation of receivables to cash and marketable securities from the viewpoint of liquidity
22. Discuss the problem of valuation of receivables.
23. Distinguish between accounts and notes receivable.
24. Explain the purpose of the reserve for doubtful accounts and notes.
25. Account for variation in the percentage of receivables to current assets in different companies.
26. Explain the significance of the following ratios: "Receivables/net sales" and "Net sales/receivables."
27. Contrast inventory on the one hand and cash and receivables on the other from the viewpoint of liquidity.
28. Name four classes of inventory.
29. Explain the meaning of and the fundamental principle underlying the valuation of inventory at "lower of market or cost."
30. Distinguish between the "first-in, first-out" and "last-in, first-out" methods of determining cost of inventory.
31. Account for variation in the percentage of inventory to current assets in different companies
32. Explain the significance of the ratio "Inventory/net sales" and "Net sales/inventory."
33. Explain the calculation and significance of the "quick" ratio.
34. Discuss the significance of the ratio "Cash and marketable securities/current liabilities" and "Cash/current liabilities."

### Assignment

- (a) Analyze the working capital position of a company from the following data:

	<i>This Year</i>	<i>Last Year</i>
Current Assets:		
Cash . . . . .	\$15,410,000	\$14,529,000
U. S. Treasury Short-term Notes . . . . .	13,627,000	7,195,000
U. S. Treasury Tax Notes . . . . .	10,250,000	5,106,000
Receivables . . . . .	13,846,000	16,100,000
Less: Reserve . . . . .	903,000	815,000
	<hr/> 12,943,000	<hr/> 15,285,000
Inventory . . . . .	19,433,000	22,135,000
Total Current Assets . . . . .	<hr/> \$71,663,000	<hr/> \$64,250,000
Current Liabilities:		
Notes Payable to Banks . . . . .	\$ 500,000	\$ 500,000
Accruals . . . . .	6,956,000	6,073,000
Reserve for Federal Taxes . . . . .	10,404,000	7,422,000
Total Current Liabilities . . . . .	<hr/> \$17,860,000	<hr/> \$13,995,000
Net Sales . . . . .	\$124,058,000	\$114,648,000

- (b) Compute the balance-sheet cost of inventory under the "first-in, first-out" method and under the "last-in, first-out" method, assuming that the inventory on hand at the end of the year contains 22,300 units and that the record of most recent purchases is:

Sept. 10 . . . . .	6,000 units at \$3 50
Oct. 5 . . . . .	7,000 units at 3 00
Nov. 12 . . . . .	8,000 units at 2.25
Nov. 24 . . . . .	4,000 units at 2 75
Dec. 27 . . . . .	2,000 units at 3 20

(c) Compute the current ratio in each year and account for the change:

	<i>This Year</i>	<i>Last Year</i>
Current Assets:		
Cash . . . . .	\$ 4,700,000	\$ 3,500,000
Accounts Receivable . . . . .	7,100,000	8,600,000
Inventory . . . . .	139,100,000	138,200,000
	<u>\$150,900,000</u>	<u>\$150,300,000</u>
Current Liabilities:		
Notes Payable . . . . .	\$ 4,400,000	\$24,500,000
Accounts Payable . . . . .	2,800,000	3,000,000
Accruals . . . . .	7,500,000	8,000,000
	<u>\$14,700,000</u>	<u>\$35,500,000</u>
Funded Debt . . . . .	\$20,000,000	none

(d) Compute the current ratio on the basis of the following data of an aircraft manufacturing company and account for the change:

	<i>This Year</i>	<i>Last Year</i>
Current Assets:		
Cash . . . . .	\$30,000,000	\$4,600,000
Securities . . . . .	7,400,000	6,200,000
Receivables . . . . .	3,800,000	4,100,000
Inventory . . . . .	11,900,000	8,000,000
	<u>\$53,100,000</u>	<u>\$22,900,000</u>
Current Liabilities:		
Accounts Payable . . . . .	\$ 4,000,000	\$1,200,000
Accruals . . . . .	2,100,000	800,000
Taxes . . . . .	1,900,000	1,000,000
Advances on Sales Contracts . . . . .	26,400,000	1,200,000
	<u>\$34,400,000</u>	<u>\$4,200,000</u>

(e) On the basis of the following data, account for the issuance of rights to stockholders at the close of "Last Year":

	<i>This Year</i>	<i>Last Year</i>	<i>Previous Year</i>
Sales . . . . .	<u>\$361,297,059</u>	<u>\$293,042,357</u>	<u>\$249,805,721</u>
Current Assets:			
Cash . . . . .	\$ 17,130,892	\$ 15,220,171	\$23,999,615
Securities . . . . .	49,110	153,148	1,938,485
Receivables . . . . .	44,355,143	33,659,388	20,475,022
Inventory . . . . .	87,174,188	65,435,102	53,184,318
Total . . . . .	<u>\$148,709,333</u>	<u>\$114,467,809</u>	<u>\$99,597,440</u>
Current Liabilities . . . . .	<u>\$ 29,885,833</u>	<u>\$ 17,631,525</u>	<u>\$13,881,251</u>

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## CHAPTER SEVENTEEN

# MAINTENANCE AND DEPRECIATION

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**Introduction.** Operating expenses represent the expenses incurred in securing the operating revenues or net sales. Those expenses include such cash items as maintenance and such non-cash items as depreciation.

**Maintenance.** Maintenance expense is the expenditures made to keep the property, plant, and equipment in good operating condition. Such cash expenditures for current maintenance include repairs, renewals, and replacements. Repairs consist of the expenses incurred in putting the asset in operating condition when it reaches a state of inefficiency which ordinary maintenance expenditures have been unable to prevent. Repairs may be classed as ordinary or extraordinary. Ordinary repairs should be charged directly to operating expenses or to a reserve previously set up for that purpose out of earnings. Extraordinary repairs may be distinguished from ordinary repairs in that they are so extensive in nature as to make good the depreciation and to extend the life of the asset beyond the originally estimated life. Extraordinary repairs may be charged to the reserve for depreciation because they make good a portion of the deterioration represented by the reserve. In other words, they extend the period during which the reserve must be built up to the required amount. If repairs do not maintain the asset in efficient operating condition, it may be necessary to replace some part of the asset (renewal) or the whole asset (replacement).

**Railroad.** Railroad maintenance is the continual repair and renewal by which the many parts of the railroad's operating assets are kept in first-class operating condition. The maintenance expenses are classed as maintenance of way and structures and of equipment. Chesapeake & Ohio Railway, for example, reported maintenance as follows:

	1944	1943	1942
Maintenance of Way & Structures . . .	\$26,649,293	\$21,728,913	\$15,850,251
Maintenance of Equipment . . .	42,853,703	35,358,969	30,547,841

Maintenance of way refers to expenditures made for repairing roadway (replacing ties and rails), for track laying and surfacing, and for repairing bridges, trestles, and culverts. Maintenance of structures includes expenditures on such assets as stations, shops, and engine houses. Maintenance of equipment refers to expenses incurred in the repairing of locomotives, freight cars, and passenger cars. The rolling stock (transportation equipment on wheels) of the Chesapeake & Ohio Railway consists of locomotives, coal cars, box and other freight cars, passenger cars, and cabooses.<sup>1</sup> Almost all of this equipment has been especially designed and constructed to fit the conditions of the road. For example, one class of locomotives is designed to haul heavy coal trains over the Allegheny Mountains, while another class is used to haul similar trains from the Ohio River to the Great Lakes. Coal cars are especially designed to withstand heavy usage and usually require the minimum of repair.

The large amount of fixed assets of a railroad consist of many thousands of individual pieces of property all of which suffer substantial wear and tear and obsolescence annually. Rails and ties, cars and engines wear out with use as much as with age. Ballast is pounded down and ground up by a heavy volume of traffic. Each year some items of road, structure, and equipment must be discarded and replaced. This annual replacement of units of property is known as maintenance. Maintenance of way and structures expenditures as reported by American railroads reached a high of \$1,263,200,000 in 1944, or approximately 20.1 per cent of operating expenses, while maintenance of equipment expenditures amounted to \$1,587,500,000, or about 25.2 per cent. In the instance of the Chesapeake & Ohio Railway, maintenance of way and structures was 19.4 per cent of operating expenses in 1944, compared to 18.8 per cent in 1943 and 16.6 per cent in 1942, while maintenance of equipment expenditures were 31.3 per cent in 1944 against 30.7 per cent in 1943 and 31.9 per cent in 1942.

PERCENTAGE OF MAINTENANCE OF WAY & STRUCTURES  
TO OPERATING EXPENSES

	CLASS 1 ROADS		C. & O.	
	W. & S.	Equip.	W. & S.	Equip.
1942 . . . . .	17.4	26.1	16.6	31.9
1943 . . . . .	19.3	24.5	18.8	30.7
1944 . . . . .	20.1	25.2	19.4	31.3

<sup>1</sup> The numbers in 1944 were 908 locomotives, 57,964 coal cars, 13,915 box and other freight cars, 436 passenger cars, and 622 cabooses.

**Maintenance policy.** The maintenance policy of a railroad is influenced by the physical condition of the property, the volume of traffic, and the managerial financial policy. Obviously, a railroad property which is in good physical condition requires less maintenance than one which is in poor condition. By the same token, an increased volume of traffic results in greater wear and tear on the road and equipment and thus necessitates more maintenance. Railroad maintenance may be divided into two general classifications: deferred and current. Deferred maintenance represents maintenance which ordinarily would be undertaken during the current year but is deferred to a later period. Current maintenance consists of currently necessary maintenance and of previously deferred maintenance which is now being undertaken. Under ordinary circumstances, railroads are not permitted to charge operating expenses of one year with maintenance work to be performed in a later year. Maintenance is therefore customarily modified in accordance with current earning power.<sup>2</sup> To reduce operating expenses during a period of poor earnings, railroads sometimes defer some currently desirable maintenance to a later period. While this policy reduces the current expenditures and bolsters up current operating income, it places a greater burden upon the earnings of future periods. Railroads may postpone but they cannot indefinitely escape necessary maintenance.

**Adequacy of maintenance: way and structures.** It is impractical to measure the adequacy of the maintenance of way and structures expenditures solely in terms of dollars, since maintenance costs vary between different periods for the same railroad and between different railroads for the same period. The two factors influencing those variations are cost of labor and materials and the character of the road. Wages and materials costs fluctuate from year to year and also may vary in different sections of the country during the same year. Differences in the character of two roads also may account for differences in maintenance costs. A road with greater traffic density, extra tracks, carrying high-grade traffic, serving mountainous territory, or subject to severe weather conditions incurs greater maintenance costs. A very high traffic density results in considerable wear and tear on railroad facilities. The maintenance of extra tracks increases the maintenance per mile of road.

<sup>2</sup> Partly because of shortages in basic materials, however, this rule was temporarily rescinded in 1942 to permit charging to operating expenses sums reserved for maintenance but not spent. Few railroads made such charges, however, since the charges were not deductible for tax purposes.

High-grade traffic requires speed in transportation and therefore needs a better roadbed than low-grade slow-moving traffic. Roads which serve mountainous territory and hence are faced with severe grades and curves, such as the Western Pacific Railroad, must expend more for maintenance than roads serving more level territory. Roads subject to severe weather conditions, such as New York Central, the New Haven, the St. Paul, and the Chicago & North Western, must expend large sums for removing snow and ice. Snow gets into wheel journals and causes hot boxes; it congeals along tracks and makes wheels slip and go flat; it piles into drifts and blocks the passage of trains; and it interferes with the operation of classification yards. The New York Central Railroad normally runs its snow cars 13,000 to 17,000 miles annually on the St. Lawrence division alone. In a recent year it spent \$3,090,961 to remove snow and ice from the tracks of the system.

The adequacy of maintenance of way and structures must be measured by comparing the expenditure to some yardstick. Two yardsticks may be used for this purpose: the volume of traffic and the way and structures to be maintained.

*Maintenance/operating revenues.* The operating revenues may be taken as a measurement of the volume of traffic and the relationship expressed by the ratio "Maintenance/operating revenues." The average for Class 1 roads in recent years has been 12.1 per cent. In the instance of the Chesapeake & Ohio Railway, which in 1944 charged \$26,649,293 for maintenance out of operating revenues of \$216,536,248, maintenance of way and structures represented 12.3 per cent of operating revenues, compared to 10.4 per cent in 1943 and 8.7 per cent in 1942 which was less than the average for class 1 roads.

PERCENTAGE OF MAINTENANCE OF WAY & STRUCTURES  
TO OPERATING REVENUES

	<i>Class 1 Roads</i>	<i>C. &amp; O.</i>
1942 . . . . .	10.6%	8.7%
1943 . . . . .	12.2	10.4
1944 .. . . .	13.4	12.3

*Maintenance per mile of road.* The total way and structures to be maintained may be measured in terms of miles of road operated and the relationship expressed as "maintenance per mile of road." The average number of miles operated is used rather than the number of miles owned, since the income statement is based upon the former. Inasmuch as the Chesapeake & Ohio Railway charged \$26,649,293

for maintenance of way and structures in 1944 and operated an average of 3,074 miles, maintenance charges were at the rate of \$8,669 per mile. When compared to \$7,043 spent in 1943 and \$5,088 in 1942, it reflected a greater annual expenditure and compared favorably with the amount spent by Class 1 railroads.

MAINTENANCE OF WAY & STRUCTURES PER  
MILE OF ROAD OPERATED

	<i>Class 1 Roads</i>	<i>C. &amp; O.</i>
1942 . . . . .	\$3,449	\$5,088
1943 . . . . .	4,834	7,043
1944 . . . . .	5,515	8,669

The measurement of maintenance per mile of road operated, however, does not give full consideration to the number and kinds of tracks operated. For instance, maintenance costs are heavier on a main-line track than on a branch-line track; hence the larger the proportion of main-line track in a system, the higher are the necessary maintenance expenditures per mile. The Chicago, Burlington & Quincy Railroad, for example, operates 9,024 miles of road of which 8,486 miles are owned directly. The owned mileage consists of 4,660 miles classified as main line and 3,826 miles classified as branches. Similarly, double-tracking results in a marked increase in necessary maintenance per mile. The Chesapeake & Ohio Railway, for example, operated 3,074 miles of road in 1944. Much of the main line and some of the lateral lines, however, were double-tracked. The total of all tracks was 6,155 and consisted of:

First track . . . . .	2,726 miles
Second track . . . . .	790
Third track . . . . .	34
Fourth track . . . . .	7
Tracks used jointly . . . . .	493
Yards and sidings . . . . .	<u>2,105</u>
	6,155 miles

On the other hand, Gulf, Mobile & Ohio Railroad operates 1,972 miles of road most of which is single track.

The Interstate Commerce Commission gives consideration to the differences in maintenance costs by the use of a weighted figure known as maintenance "per equated mile." This calculation recognizes the relative importance of main track as distinguished from extra track and side lines. It facilitates the comparison of the maintenance expenditures of two railroads of varying mileage. The equated track-mile calculation assigns a weight of 100 to first main track, 80 to additional main tracks, and 50 to all other tracks and,



at the same time, excludes all trackage rights. The maintenance of way and structures per equated track-mile for the Chesapeake & Ohio Railway in 1944 was \$5,498, compared to \$4,473 in 1943 and \$3,255 in 1942.

**Adequacy of maintenance: equipment.** Since equipment provides the direct source of revenues, the maintenance of it in good condition is equally important. The adequacy of maintenance of equipment may be measured in relation to the volume of traffic and to the equipment to be maintained. Ordinarily, expenditures for maintenance of equipment vary even more directly with traffic than maintenance of way and structures. Obviously, a more intensive use of equipment in order to handle an increased volume of traffic requires greater expenditures for repairs. The amount expended for maintenance also depends upon the age and condition of the equipment in use. Extensive purchases of new equipment ordinarily lowers the necessary maintenance expenses for the first few years after purchase. On the other hand, the longer equipment has been in use, the greater is the need for continuous maintenance. In 1943 about 48 per cent of the steam locomotives of American railroads had been in service for over 28 years, and approximately 30 per cent of the freight cars over 25 years. Expenditures of American railroads for maintenance of equipment increased from \$676,597,089 in 1938 to \$1,587,484,850 in 1944.

*Maintenance/operating revenues.* The ratio of maintenance of equipment to operating revenues shows the percentage of operating revenues devoted to maintenance of equipment. It gives some indication whether the company is following a liberal policy or is skimping on maintenance. For the Chesapeake & Ohio Railway, maintenance of equipment expenditures represented 19.8 per cent of operating revenues in 1944, compared to 17.0 per cent in 1943 and 16.8 per cent in 1942. During the same period this was higher than the average for Class 1 railroads.

PERCENTAGE OF MAINTENANCE OF EQUIPMENT  
TO OPERATING REVENUES

	<i>Class 1 Roads</i>	<i>C. &amp; O.</i>
1942 . . . . .	16.2%	16.8%
1943 . . . . .	15.9	17.0
1944 . . . . .	16.8	19.8

*Serviceable equipment.* An additional check upon the maintenance of equipment is found in the report on the condition of the equipment, which indicates the equipment in good order and the equip-

ment in need of repairs. Analysis of the condition of the equipment of the Chesapeake & Ohio Railway indicated the following:

		<i>Unserviceable Equipment — Per Cent</i>				<i>Serviceable</i>
		<i>Locomotives</i>		<i>Cars</i>		<i>Locomotives</i>
		<i>Freight</i>	<i>Passenger</i>	<i>Freight</i>	<i>Passenger</i>	<i>Stored</i>
1940	.	15.6	9.8	1.9	4.5	63
1941	. . .	13.6	10.6	1.4	2.0	50
1942	.	14.5	9.3	1.2	2.5	12
1943	.	13.7	10.4	1.1	2.5	3
1944	.	14.0	10.2	1.3	3.2	10

A recent study revealed that the total number of locomotives on American railroads decreased from 43,558 in 1939 to 42,139 in 1944. Much more significant was the fact that "stored serviceable" locomotives declined from 2,916 to 607 and those awaiting repairs from 7,920 to 2,000. The designation "stored serviceable" locomotives refers to the reserve stock of locomotives that are available to take care of any emergency that may arise. An increase in the percentage of unserviceable equipment of a railroad indicates two unfavorable situations: (a) an accumulation of deferred maintenance that will have to be absorbed in the maintenance expense of subsequent years, and (b) the possibility of having to spend large amounts for hire of equipment. The Chesapeake & Ohio Railway experienced no substantial change in the percentage of unserviceable equipment; but, on the other hand, there was a marked decrease in the number of serviceable locomotives stored.

**Total maintenance.** A comprehensive criterion of maintenance policy is measured by the total maintenance expense ratio. This ratio represents the relation between the aggregate expenditure for maintenance of way and structures and of equipment on the one hand and the operating revenues on the other. Total maintenance ratio for the Chesapeake & Ohio Railway 1942–1944 averaged 28.3 per cent, compared to 28.4 per cent for Class 1 railroads.

PERCENTAGE OF TOTAL MAINTENANCE EXPENSE  
TO OPERATING REVENUES

	<i>Class 1 Roads</i>	<i>C. &amp; O.</i>
1942 . . . . .	26.9%	25.5%
1943 . . . . .	28.1	27.4
1944 . . . . .	30.2	32.1

While a high maintenance ratio for a railroad might be interpreted as possibly indicative of excessive maintenance, it may on the other hand reflect a program of property rehabilitation. For example,

the maintenance ratio of the St. Louis-San Francisco Railway 1932-1940 averaged 35.2 per cent of operating revenues. This was a reflection, however, of the program of property rehabilitation followed by the trustee during the period. The Missouri-Kansas-Texas Railroad during the period 1940-1944 had an average total maintenance ratio of 32.8 per cent, the ratio rising from 28.7 per cent in 1940 to 36.1 per cent in 1944. A large part of the maintenance expenditures, however, represented capital improvements rather than ordinary maintenance.

**Public utility.** The adequacy of maintenance in the analysis of public utility companies is measured in terms of volume of business as indicated by operating revenue. In the instance of the Hartford Electric Light Company in 1944, maintenance represented 4.9 per cent of operating revenue, compared to 4.5 per cent in 1943 and 3.5 per cent in 1942. In general, maintenance expenses average about 5 per cent of operating revenue in electric light and power companies.

**Industrial.** There is no uniformity among industrial companies in reporting maintenance expenses. While some companies report the amount as a separate item in the income statement, the usual practice is to include it in the total amount reported as operating expenses. In some instances, however, where it is included in the operating expenses item, the specific amount of operating expenses expended for maintenance is reported as a note accompanying the income statement. National Dairy Products Corporation, for example, in its 1944 report did not reveal the amount expended for maintenance in its statement of operating expenses but reported the amount separately in the president's remarks as \$11,779,000 in 1944, compared to \$9,797,000 in 1943.

During periods of depression, industrial companies with strong working capital positions usually undertake extensive programs of maintenance and repair, especially with respect to parts of the plant to which they can give little attention in periods of great activity. On the other hand, companies with weak working capital are obliged to postpone necessary maintenance until earnings are again adequate to provide the funds.

The usual ratio for measuring adequacy of maintenance is by a comparison with net sales. In the instance of National Dairy Products Corporation, maintenance represented 1.9 per cent of net sales in 1944, compared to 1.6 per cent in 1943.

**Depreciation.** Depreciation is the loss in value of a replaceable

or reproducible tangible asset. The United States Treasury Department has described depreciation as follows:

The necessity for a depreciation allowance arises from the fact that certain property used in the business gradually approaches a point when its usefulness is exhausted. . . . In the case of tangible property, it applies to that which is subject to wear and tear, to decay or decline from natural causes, to exhaustion and to obsolescence due to the normal progress of the art, as where machinery or other property must be replaced by a new invention, or due to the inadequacy of the property to the growing needs of the business. It does not apply to inventories or to stock in trade, nor to land apart from the improvements or physical development added to it.

As one writer puts it:<sup>3</sup> "All machinery is on an irresistible march to the junk heap, and its progress, while it may be delayed, cannot be prevented by repairs." The assets subject to continuous depreciation are such fixed assets as buildings, machinery, and equipment. Land, however, is not considered as subject to depreciation.

The cost of a fixed asset represents a lump sum prepayment for the services which the asset will render during its service life. At the end of each year of its service life, an equitable portion of its full cost constitutes an indirect cost of operation which is chargeable to the period receiving the service. The service life of the asset may be shortened, however, by the additional factor of obsolescence, which may cause the asset to be abandoned prior to the end of its normal useful life. For example, equipment may be discarded before the end of its period of physical usefulness because of (a) subsequent improvements in methods, machines, formulae, or processes or (b) changes in demand for the product. Under those conditions the usual normal depreciation charges may prove inadequate to write off the asset completely at the time of abandonment and an additional charge must be made for obsolescence. While replacements tend to keep pace with obsolescence in good times, companies tend to limit replacements in poor times, with the result that obsolescence accelerates.

**Depreciation and maintenance.** Depreciation is closely related to maintenance. No unit of property will remain long in serviceable condition without maintenance. By the same token, even with maintenance, depreciation takes place with the result that the asset will ultimately reach a point where its service efficiency no longer can be maintained. Adequate maintenance, however, may reduce the rate of depreciation. A liberal maintenance policy may not

<sup>3</sup> Henry R. Hatfield, *Accounting: Its Principles and Problems*, New York, D. Appleton and Company, 1928, p. 130.

only improve the efficiency of the asset but may also assure it a longer service life. The United States Bureau of Internal Revenue has explained a reasonable rate for depreciation as "dependent not only on the prospective useful life of the property when acquired, but also on the particular conditions under which the property is used as reflected in the taxpayer's operating policy and the accounting policy followed with respect to repairs, maintenance, replacements, charges to the capital account and to the depreciation reserve."

**Annual depreciation.** The three basic factors in the determination of the annual depreciation charge on an asset are the cost of the asset, the estimated serviceable life of the asset, and the residual value of the asset. On a straight-line basis the annual depreciation charge on an asset which cost \$50,000 and which has an estimated service life of ten years and a scrap value of \$5,000 is \$4,500 calculated as follows:

$$\begin{aligned} \$50,000 \text{ (cost)} - \$5,000 \text{ (scrap value)} &= \$45,000 \text{ (depreciable value)} \\ \$45,000 \text{ (depreciable value)} / 10 \text{ (service life)} &= \$4,500 \text{ (annual depreciation)} \end{aligned}$$

The cost of the asset, which is the maximum value the asset can surrender, is a matter of record. The serviceable life and the scrap value, however, are matters of judgment and at best are estimates.

The depreciation schedule of a company may be based upon a unit rate or a composite rate. Under the unit rate, each individual asset is considered separately and an appropriate rate of depreciation established for it. The composite rate, on the other hand, is applicable to a group of assets having like characteristics and service lives. An appropriate rate of depreciation is applied to the group as a whole. The theory underlying the composite rate is that while some assets in the group may enjoy a service life longer than the average selected for the group, other assets in the group will probably have a shorter service life. The National Dairy Products Corporation, for example, originally followed the unit method of depreciation in respect to all assets except land improvements and buildings. Later, however, it adopted the group composite rate method.

**Actual and theoretical depreciation.** A distinction may be made between actual and theoretical depreciation of an asset.<sup>4</sup> Actual depreciation refers to the physical deterioration which has actually taken place in an asset up to a given date. The rate of actual depreciation of an asset is usually low during the early years of service

<sup>4</sup> H. A. Finney, *Principles of Accounting: Intermediate*, New York, Prentice-Hall, Inc., 1935, p. 267.

life and high during the later years. Theoretical depreciation, on the other hand, refers to the amount of depreciation charged as an operating expense at any given date. It is an estimate of the average periodic loss of depreciable value. While, over the life of the asset, total actual and total theoretical depreciation should agree, they do not necessarily agree at any one time during the life of the asset, with the exception of the last year. If theoretical depreciation were based upon actual depreciation, depreciation charges would be low during the early years when the asset is at its maximum efficiency and high during the later years when the asset is at its minimum efficiency. In practice, however, depreciation charges are intended to spread the depreciable cost of the asset over the period of service life in a more or less equitable fashion.

The investor is not in a position to examine the depreciation rate for each asset nor to judge of its adequacy. He is limited to a consideration of the total assets subject to depreciation and the total depreciation charged. The best he can do is (a) to compare the annual depreciation rate with that used by other companies in the same industry as a basis of judging adequacy or inadequacy of the total annual depreciation charge and (b) to determine whether the company has altered its depreciation policy by increasing or reducing the total annual depreciation charge relative to the assets being depreciated.

**Significance of depreciation.** Depreciation is significant to the investor in its relation to the balance sheet and the income statement. The main purpose of the depreciation charge from the standpoint of the balance sheet is to maintain intact the value of the capital invested in the asset. As a credit to the asset, depreciation reduces the asset valuation. The annual depreciation charge results in the retention in the business of some of the income-producing assets. Thus the capital invested in the asset is protected by making earnings unavailable for distribution to the stockholders. Charging depreciation as an expense builds up and retains in the business a fund of miscellaneous assets so that when the asset is fully depreciated sufficient capital will be available to make the replacement of the asset possible. The annual depreciation charge, therefore, effects a transfer of capital from the fixed assets to other assets and thus maintains the integrity of the capital invested in the fixed assets. From this standpoint the main purpose of the depreciation charge is to prevent the dissipation of capital and to show the unamortized cost of the depreciable assets in the balance sheet.

At the same time, depreciation, as a charge against income, reduces the net income available for distribution to the stockholders. Since depreciation is a cost of operation, its inclusion in operating expenses is necessary in order to determine the correct operating costs and hence the correct net income. The depreciation policy of a company, therefore, is important to the investor in judging the correctness of the statement of asset value and of net income.

**Adequacy of depreciation.** The adequacy of depreciation is usually measured in relation to the volume of business and to the invested capital subject to depreciation. The depreciation may be related to the volume of business by the ratio "Depreciation/operating revenues or net sales." In view of the fact, however, that depreciation is influenced in part by maintenance, a comprehensive measurement of adequacy of depreciation is determined by the ratio "Maintenance and depreciation/operating revenues or net sales." The latter ratio recognizes the fact that heavy maintenance may reduce the rate of depreciation while light maintenance may increase the rate of depreciation.

The depreciation charge may be related also to the fixed asset subject to depreciation by the ratio "Depreciation/gross plant." This ratio indicates the rate at which the depreciable asset is being depreciated. An annual rate of 4 per cent, for example, indicates that the average life of all the items in the gross plant account is taken as twenty-five years. General Electric Company, for example, charged depreciation at an average rate of 8.4 per cent of gross plant during the period 1940-1944, whereas the rate for Westinghouse Electric Corporation during the same period averaged 5.7 per cent.

The extent to which the asset has been depreciated by past charges is measured by the ratio "Depreciation reserve/gross plant." The more liberal depreciation policy of General Electric Company in contrast to that of Westinghouse Electric Corporation was reflected in the fact that the depreciation reserve for the former was 86.0 per cent of gross plant in 1944 as against 56.3 per cent for the latter. This ratio should be judged, however, in terms of the reasonableness of the plant account, the promptness with which property is retired when it has reached the end of its useful life, and the character of the plant account.<sup>5</sup>

**Railroad.** Maintenance charges as reported by a railroad include (a) actual expenditures for repairs to roadway property, rolling

<sup>5</sup> See Chapter Eighteen on fixed capital.

stock, and motive power and (b) charges for depreciation and depletion, amortization, and retirements. The Chesapeake & Ohio Railway, for example, in 1944 reported total maintenance of \$69,-502,996 of which \$26,649,293 was for maintenance of way and structures and \$42,853,703 was for equipment. Included in the total, however, was \$20,396,060 for depreciation and depletion, amortization, and retirements allocated as follows: \$3,591,973 for way and structures, \$16,599,927 for equipment, and \$204,160 for miscellaneous non-operating physical property. The total maintenance reported consisted, therefore, of \$49,106,936 for maintenance and \$20,396,060 for depreciation and depletion, amortization, and retirements. A break-down of the total maintenance charge according to the type of asset was as follows:

	1944	1943	1942
Way & Structures:			
Maintenance . . . . .	\$23,057,320	\$18,770,125	\$15,261,711
Depreciation, etc. . . . .	3,591,973	2,958,788	588,540
Total . . . . .	<u>\$26,649,293</u>	<u>\$21,728,913</u>	<u>\$15,850,251</u>
Equipment:			
Maintenance . . . . .	\$26,253,776	\$22,165,965	\$19,299,878
Depreciation, etc. . . . .	16,599,927	13,193,004	11,247,963
Total . . . . .	<u>\$42,853,703</u>	<u>\$35,358,969</u>	<u>\$30,547,841</u>
Total . . . . .	<u>\$69,502,996</u>	<u>\$57,087,882</u>	<u>\$46,398,092</u>

The need of providing for the retirement of railroad equipment is important, since numerous units of equipment are replaced every year as needed. Under Interstate Commerce Commission rules, depreciation of equipment has been compulsory but depreciation of road and structures has been optional. Prior to 1943, retirements of depreciable property were charged to operating expenses or to profit and loss, and retirements of undepreciable property were charged to profit and loss. Effective January 1, 1943, however, railroads were required by the Commission to accrue depreciation upon the cost of road property — bridges, buildings, telegraph and telephone lines, signals and interlockers, and shop and power plant machinery. Under this ruling a percentage of the cost of depreciable property is charged to operating expenses by a credit to a depreciation reserve. Retirements of such property are charged to the reserve. In addition, all retirements of undepreciable property are charged to operating expenses. The significance of this change is twofold: (a) it placed a substantial part of the road property upon an accrued depreciation basis similar to equipment, and (b) it should result in an increase in operating expenses and a corre-



sponding decrease in earnings. It is the common practice, however, for railroads to make no substantial provision for depreciation of miscellaneous physical property.

Analysis of the charges for depreciation and depletion, amortization, and retirements made by the Chesapeake & Ohio Railway revealed the following:

	1944	1943
Way & Structures:		
Depreciation . . . . .	\$ 2,462,117	\$ 2,028,803
Amortization . . . . .	657,560	396,311
Retirements . . . . .	472,296	533,674
Total . . . . .	<u>\$ 3,591,973</u>	<u>\$ 2,958,788</u>
Equipment:		
Depreciation . . . . .	8,971,414	9,091,883
Amortization . . . . .	7,628,217	4,101,121
Retirements . . . . .	296	
Total . . . . .	<u>\$16,599,927</u>	<u>\$13,193,004</u>
Misc. Non-op Prop :		
Depreciation . . . . .	150,630	199,538
Amortization . . . . .	51,949	48,023
Retirements . . . . .	1,581	8,695
Total . . . . .	<u>\$ 204,160</u>	<u>\$ 238,866</u>
Total . . . . .	<u>\$20,396,060</u>	<u>\$16,890,658</u>

The total charge of \$3,591,973 in 1944 to way and structures consisted of \$2,462,117 for depreciation of roadway property, \$657,560 for amortization of defense projects on road, and \$472,296 for retirement of road property. The total charge of \$16,599,927 to equipment consisted of \$8,971,414 for depreciation, \$7,628,217 for amortization, and \$296 for retirements. The \$8,971,414 for depreciation included \$8,694,233 for depreciation of equipment and \$277,181 for depreciation of shop and power-plant machinery. The \$7,628,217 for amortization represented amortization of equipment defense projects. This charge was included for the first time in 1942 and was increased from \$2,479,096 in 1942 to \$7,628,217 in 1944. Railroads have been permitted to write off defense projects over a period of five years. The Interstate Commerce Commission expressed the belief that operating expenses of the Class 1 railroads would be reduced \$23,400,000 annually after 1948 through this accelerated amortization practice. The Commission estimated that, on the basis of equipment subject to amortization under the five-year plan valued at \$688,800,000 at the close of 1943, and with an assumed depreciation rate of 3.4 per cent instead of the then current 20 per cent on defense items, operating expenses would be 11.0 per cent smaller at the end of the period than they were during 1943. Upon completion of the five-year term, the amortized equip-

ment presumably would be capable of many more years of service, during which time neither amortization nor depreciation would be charged on its operating expenses. The retirement of equipment expense represents the book value of the equipment (cost less accrued depreciation) at the time the equipment is retired, less the scrap value.

The charge for depreciation and depletion, amortization, and retirements on equipment made by the Chesapeake & Ohio Railway in 1944 represented 7.6 per cent of operating revenues, compared to 6.3 per cent in 1943, and it represented 6.5 per cent of the investment in equipment in 1944, compared to 5.5 per cent in 1943.

**Public utility.** Theoretically, public utility rates should not exceed the cost of the service. The cost of the service includes, among other things, the value of the service life of the physical plant and equipment consumed in rendering the service. The annual depreciation charge affects the operating costs and the rate base and therefore is an important element in rate-making. In general, regulatory commissions, through the prescription of accounting methods, have assumed jurisdiction over the depreciation practices of utility companies both as to the methods of accounting for depreciation and as to the amount of depreciation.<sup>6</sup>

Two methods of charging for depreciation have been used by public utility companies: the reserve method and the retirement method. The reserve method makes an annual charge for depreciation which is charged to operations and credited to depreciation reserve. The retirement method, on the other hand, makes no annual charge for depreciation but instead charges the cost of the asset, less its scrap value, to operations of the year in which the asset is retired from service. The essential distinction between the two methods lies primarily in the time at which the charge is made; that is, in annual installments (reserve method) or at the time of retirement (retirement method). The depreciation reserve method has been adopted by the Federal Communications Commission and by many of the state commissions. The uniform systems of accounts prescribed by federal and state commissions having jurisdiction generally require electric and gas companies to follow the reserve method by recording as of the end of each month the estimated amount of depreciation accrued during that month on

<sup>6</sup> A recent report of the Milwaukee Gas Light Company stated: "The provisions for replacement and retirement of the Company's property are made in compliance with depreciation requirements of the Wisconsin statutes and at rates approved by the Public Service Commission of Wisconsin."

depreciable utility plant. The Consolidated Edison Company of New York, for example, used the retirement method until 1938, when the Public Service Commission of the State of New York required the company to follow the reserve method.

Under the reserve method the annual charge is usually determined by the straight-line method. The straight-line method was adopted by the Federal Power Commission in 1937 and later recommended by the National Association of Utility Commissioners. Many states made it effective in 1938. The Securities and Exchange Commission was placed on record as favoring the straight-line method by the chairman of the Commission, who announced: <sup>7</sup>

We also feel that it is both practicable and sound to base straight-line computations on age-life studies of depreciable property as modified from time to time by actual experience.<sup>7</sup>

While the annual depreciation charge of Hartford Electric Light Company represented a decreasing percentage of operating revenue, the total of maintenance and depreciation represented approximately the same percentage. Relative to the gross plant, the annual depreciation charge remained substantially the same while the depreciation reserve steadily increased. In general, depreciation averages about 10 per cent of operating revenue in electric light and power companies.

	<i>Depreciation/ Operating Revenue</i>	<i>Main. &amp; Dep / Operating Revenue</i>	<i>Depreciation/ Gross Plant</i>	<i>Dep Res./ Gross Plant</i>
1942 . . .	6.3%	9.8%	1.8%	25.4%
1943 . . .	4.6	9.1	1.5	26.8
1944 . . .	4.5	9.4	1.6	28.9

**Industrial.** Under the rules of the Securities and Exchange Commission, a statement of depreciation policy must be included in reports filed by industrial companies with the Commission. National Dairy Products Corporation reported that depreciation was computed by the straight-line method at specific annual rates which were based upon estimated average useful life of the particular class of assets, with higher allowances on leasehold improvements and on property not in active use in the business. Losses on milk bottles were determined by periodic inventories and were charged to repairs and maintenance. Property retired was written off or written down to salvage values, as the case might be, by charges to depreciation reserves to the extent of depreciation already provided.

<sup>7</sup> Speech before the committee on depreciation of the National Association of Railroad and Utilities Commissioners at Chicago, March 8, 1944.

Provision for depreciation was not made, however, on fully depreciated property still in use in the business and carried on the books at nominal amounts. While the annual depreciation charge of National Dairy Products Corporation represented a smaller percentage of net sales than that of The Borden Company, it did represent a larger percentage of gross plant. On the other hand, The Borden Company had depreciated a larger percentage of gross plant.

	1944		1943		1942	
	National	Borden	National	Borden	National	Borden
Deprec /Net Sales . . . . .	1.4%	1.5%	1.5%	1.7%	1.6%	1.6%
Deprec /Gross Plant . . . . .	6.2	4.9	6.0	5.0	6.1	5.0
Dep Res./Gross Plant . . . . .	39.7	49.3	37.7	47.7	35.5	49.4

**Maintenance and depreciation.** Though maintenance and depreciation charges in general are important to the investor, their importance in specific instances varies according to the nature of the business and the financial structure of the company. Those charges are much more important in companies like railroads and public utilities, whose fixed assets constitute a very large percentage of the total assets, than in those industrial companies where fixed assets are a very small percentage. They are of greater significance also in companies whose capital structure includes a large funded debt than in those whose capital structure consists largely of stock. In the former case, the large fixed charges narrow the margin of earnings available for the stockholders and, therefore, any decrease in earnings resulting from an increase in maintenance or depreciation, or both, would result in an important percentage decrease in net income. For example, assume an increase of \$5,000,000 in maintenance and depreciation charges for both Company A, which has funded debt, and Company B, which has no funded debt. As a result of the increase in charges and consequent decline in earnings, the net income of Company A is decreased 22.8 per cent whereas that of Company B is decreased only 11.9 per cent.

	COMPANY A		COMPANY B	
	Before	After	Before	After
Available for Fixed Charges . . . . .	\$42,000	\$37,000	\$42,000	\$37,000
Fixed Charges . . . . .	20,000	20,000		
Net Income . . . . .	\$22,000	\$17,000	\$42,000	\$37,000

### Review Questions

1. Define maintenance.
2. Indicate the relation between maintenance, repairs, renewals, and replacements.

3. Name the classification of maintenance charges by a railroad.
4. Indicate the relation between depreciation and maintenance by a railroad.
5. Name the factors influencing the maintenance policy of a railroad.
6. Discuss the inadequacy of a dollar basis as a measurement of maintenance of railroad way and structures.
7. Indicate the factors influencing variations in the amounts spent for maintenance of railroad way and structures.
8. Name and explain the bases of measuring adequacy of maintenance of railroad way and structures.
9. Name and explain the bases of measuring adequacy of maintenance of railroad equipment.
10. Explain the significance of the percentage of unserviceable equipment of a railroad.
11. Discuss the significance of "Total railroad maintenance/operating revenues."
12. Explain the measurement of adequacy of maintenance in a public utility and in an industrial company.
13. Define depreciation
14. Name the assets subject to depreciation.
15. In what way is the cost of an asset a prepayment?
16. Discuss the relation of maintenance to depreciation.
17. Name and explain the factors in the determination of the annual depreciation charge.
18. Distinguish between a unit rate and a composite rate of depreciation.
19. Explain the relation between actual and theoretical depreciation.
20. Discuss the problem in the analysis of depreciation.
21. Discuss the relation of the depreciation charge to the balance sheet and to the income statement from the investment viewpoint.
22. Explain the bases upon which the adequacy of depreciation may be measured.
23. Explain the measurement of adequacy of depreciation in a railroad, in a public utility, and in an industrial company.
24. Account for the variation in importance of maintenance and depreciation in different companies.

### Assignment

- (a) Determine the annual depreciation charge (straight-line method) on a fixed asset with an original cost of \$55,000, an estimated service life of fifteen years, and a residual value of \$10,000.
- (b) Indicate the effect upon the following items of an additional charge to depreciation of \$23,000:

Fixed Assets . . . . .	\$140,000
Reserve for Depreciation . . . . .	32,000
Net Fixed Assets . . . . .	<u>\$108,000</u>
Operating Profit . . . . .	\$ 83,000

## INVESTMENT ANALYSIS

(c) Analyze the maintenance and depreciation policy from the following data:

	<i>This Year</i>	<i>Last Year</i>
(1) RAILROAD: *		
Operating Revenues . . . . .	\$471,119,000	\$361,149,000
Maintenance of Way & Structures . . . . .	51,801,000	35,326,000
Maintenance of Equipment ** . . . . .	70,069,000	53,916,000
Investment in Equipment . . . . .	365,996,000	348,525,000
Reserve for Depreciation and Amortization of Equipment . . . . .	224,915,000	204,573,000

\* Miles of road operated 13,147, this year, 13,137, last year

\*\* Includes depreciation and amortization of equipment of \$21,842,000, this year and \$15,521,000, last year.

	<i>This Year</i>	<i>Last Year</i>
(2) PUBLIC UTILITY:		
Operating Revenue . . . . .	\$180,858,000	\$172,439,000
Maintenance Charge . . . . .	9,353,000	8,685,000
Depreciation Charge . . . . .	22,906,000	20,778,000
Utility Plant . . . . .	746,378,000	744,779,000
Reserve for Depreciation of Utility Plant . . . . .	168,434,000	153,952,000

## (3) INDUSTRIAL:

	<i>This Year</i>	<i>Last Year</i>
Net Sales . . . . .	\$371,867,000	\$325,350,000
Maintenance Charge . . . . .	6,680,000	6,692,000
Depreciation Charge . . . . .	6,443,000	6,483,000
Gross Plant . . . . .	127,095,000	125,437,000
Reserve for Depreciation of Gross Plant . . . . .	60,559,000	56,473,000

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## CHAPTER EIGHTEEN

### FIXED CAPITAL

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**Introduction.** The very nature of railroad and public utility operation requires a substantial investment in fixed assets. The investment needed in fixed assets in the industrial field, however, differs from one industry to another. The consolidated balance sheet of United States Steel Corporation and its subsidiaries shows approximately 50 per cent of the total assets in the form of fixed assets, in contrast to Montgomery Ward & Company, which has about 13 per cent. The importance of the fixed assets in an individual company is measured by the ratio "Fixed assets/total assets." The Chesapeake & Ohio Railway had an investment in transportation property of \$635,482,111 in 1944, which represented 78.1 per cent of the total assets of \$814,061,762. The utility plant of Hartford Electric Light Company was valued at \$38,263,613, or 85.0 per cent of total assets of \$45,010,789. On the other hand, the net investment of National Dairy Products Corporation in property, plant, and equipment was stated at \$84,973,627, or 40.8 per cent of total assets of \$208,012,687. This ratio in all cases is designed to show what part of the total assets employed in the business is represented by operating property.

Inasmuch as an increase in this ratio may signify either favorable or unfavorable growth of the company, analysis must be made of the changes that have taken place in the fixed assets or operating property.

**Railroad.** The investment in transportation property of the Chesapeake & Ohio Railway was reported as:

	1944	1943	1942
Road & Equipment:			
Road . . . . .	\$379,714,301	\$375,232,280	\$371,346,444
Equipment . . . . .	255,120,482	236,059,311	226,216,510
General Expenditures . . . . .	3,515,674	3,527,227	3,530,271
Total . . . . .	\$638,350,457	\$614,818,818	\$601,093,225
Improvements on Leased Property . . . . .	255,333	249,937	254,843
Total . . . . .	\$638,605,790	\$615,068,755	\$601,348,068

Less.

Acquisition Adjustment . . . . .	\$ 259,471	\$ 247,642	
Donations and Grants . . . . .	2,864,208	2,856,983	\$ 251,239
Total . . . . .	<u>\$ 3,123,679</u>	<u>\$ 3,104,625</u>	<u>\$ 251,239</u>
Investment in Transportation Property	\$635,482,111	\$611,964,130	\$601,096,829

The changes in these accounts revealed that the company had increased the investment in both road and equipment and had spent approximately the same amount annually for general expenditures and for improvements on leased property.

The nature and extent of the changes in these accounts is determined, however, by further analysis of the "Road" account and the "Equipment" account for the purpose of measuring the extent to which the company has increased its investment in property and at the same time the extent to which it has retired property. The "Road" account, which includes the investment in road and general expenditures made upon the road, revealed the following changes:

	1944	1943	1942
Cost of road, beginning of year . .	\$378,759,507	\$374,876,715	\$372,210,055
Additions during year . . . . .	7,930,804	4,620,729	5,275,384
Total road . . . . .	<u>\$386,690,311</u>	<u>\$379,497,444</u>	<u>\$377,485,439</u>
Less:			
Property retired . . . . .	3,460,336	737,937	2,387,263
Property transferred to "Miscellaneous Physical Property" . . . . .			221,461
	<u>\$ 3,460,336</u>	<u>\$ 737,937</u>	<u>\$ 2,608,724</u>
Cost of road, end of year . . . . .	\$383,229,975	\$378,759,507	\$374,876,715

Analysis of "Road" account indicated that the company made both substantial additions and retirements in 1944, compared to 1943 and 1942.

The "Equipment" account revealed the following changes:

	1944	1943	1942
Cost of equipment, beginning of year . .	\$236,059,311	\$226,216,510	\$211,027,584
Additions during year . . . . .	19,617,950	10,527,207	15,344,847
Total equipment . . . . .	<u>\$255,677,261</u>	<u>\$236,743,717</u>	<u>\$226,372,431</u>
Less: equipment retired . . . . .	556,779	684,406	155,921
Cost of equipment, end of year . . . . .	<u>\$255,120,482</u>	<u>\$236,059,311</u>	<u>\$226,216,510</u>

Analysis of the "Equipment" account indicated that the company made substantial additions to equipment, adding a total of \$45,490,004 during the period 1942-1944. In 1943 and 1944, however, it increased the amount of equipment retired.

*Public utility.* The "Utility plant" account of Hartford Electric Light Company showed the following changes:



	1944	1943	1942
Utility plant, beginning of year . . . . .	\$38,445,705	\$37,845,650	\$33,608,275
Net additions during year . . . . .	182,092 *	600,055	4,237,375
Utility plant, end of year . . . . .	<u>\$38,263,613</u>	<u>\$38,445,705</u>	<u>\$37,845,650</u>

\* Credit

Analysis of the account revealed that after making substantial net additions in 1942 the company reduced those additions in 1943 and in 1944 reported a decrease in the utility plant investment.

*Industrial.* The fixed asset account of National Dairy Products Corporation consisted of:

	1944	1943	1942
Land . . . . .	\$ 13,003,610	\$ 14,102,671	\$ 14,630,083
Buildings, machinery and equipment . . . . .	127,888,420	133,967,041	136,324,890
Total . . . . .	<u>\$140,892,030</u>	<u>\$148,069,712</u>	<u>\$150,954,973</u>

The decrease in the total investment in land, buildings, machinery, and equipment from \$150,954,973 in 1942 to \$140,892,030 in 1944 reflected a decrease in the investment in both land on the one hand and in buildings, machinery, and equipment on the other. Changes in the "Land" account were as follows:

	1944	1943	1942
Cost, beginning of year . . . . .	\$14,102,671	\$14,630,083	\$15,353,049
Net reduction during year . . . . .	1,099,061	527,412	722,966
Cost, end of year . . . . .	<u>\$13,003,610</u>	<u>\$14,102,671</u>	<u>\$14,630,083</u>

While the total investment in land decreased from \$14,630,083 in 1942 to \$13,003,610 in 1944, the rate of decrease was greatly increased in 1944. Changes in the "Buildings, machinery, and equipment" account were as follows:

	1944	1943	1942
Cost, beginning of year . . . . .	\$133,967,041	\$136,324,890	\$136,534,165
Net reduction during year . . . . .	6,078,621	2,357,849	9,275
Cost, end of year . . . . .	<u>\$127,888,420</u>	<u>\$133,967,041</u>	<u>\$136,324,890</u>

The rate at which the investment in buildings, machinery, and equipment decreased was considerably increased in 1943 and accelerated in 1944. The company was writing down rather than adding to the investment in fixed assets.

**Fixed assets.** Current assets available for the payment of the current liabilities reflect the immediate solvency of the company by revealing the company's ability to pay current debts as they mature. The stability or solidarity of the company, on the other hand, is reflected in the relation of the fixed assets to the fixed liabilities. The fixed assets, representing properties to be held

permanently for operating purposes, offer a basis for the security of long-term debt. The fixed liabilities look to the fixed assets as tangible protection for the debt. The fixed liabilities represent a definite amount of principal which must be repaid. Assets, on the other hand, always present a problem of valuation. The valuation of fixed assets, however, is more complex than the valuation of current assets. Fixed assets are less liquid than current assets and they are turned over only after long intervals or not at all. Two important problems arise, therefore, with respect to fixed assets: (a) What is the proper value of the fixed assets, and (b) what relation do the fixed assets bear to the fixed liabilities?

**Valuation of fixed assets.** Basically, fixed capital assets should be valued at original cost less depreciation. The net valuation of the fixed assets on the books of the company reflect the cost of the plant and equipment, and subsequent additions on the one hand and the depreciation reserve which has been built up and the retirements of the items making up the fixed asset account on the other hand. The depreciated book value of the fixed assets, therefore, is affected by the price level at the time of acquisition of the assets, the length of time which has elapsed since acquisition, and the policies followed with respect to maintenance, depreciation, betterments, and replacements.

Some industrial companies have written down fixed assets to a nominal value, as low as \$1 in some cases. Under this practice, full depreciation was charged against the operations of a single year instead of distributed over the useful life of the assets. This policy is subject to severe criticism, since under it future profits are overstated and future losses understated by the amount of anticipated depreciation. In fact, in some instances it permits the dissipation of the capital investment in the assets without reflecting the fact in the statements issued at the time of the dissipation. In addition, it misleads both stockholders and prospective investors into the assumption of ultra-conservatism on the part of the management, whereas in truth it reflects poor management. The Securities and Exchange Commission has characterized it as a "questionable" practice.

Inasmuch as original cost and depreciation as reported provide ample room for flexibility, several considerations arise: (a) Was the original cost price inflated or more than the market value at the time of purchase? (b) Have repairs and ordinary maintenance been charged as operating expenses, or have they been added to the

capital investment in the same manner as additions and betterments? (c) Have betterments or improvements been made without any corresponding increase in the book value of the property? (d) Have allowances or reserves for depreciation been adequate? The investor, however, is not in a position to form a comprehensive judgment on those considerations except as to the apparent adequacy or inadequacy of the depreciation policy.

Basically, the depreciated cost of fixed assets is more an historical record than a measure of current value of the assets. The value of the fixed assets to a business and therefore to the stockholders is measured solely by their value in use. For this reason the current value of the fixed assets should be measured in terms of the productivity of the assets as reflected in the operating revenue or net sales. While it is true that the fixed assets alone do not produce the revenue or sales, it is true nevertheless that without them the company would be unable to operate.

**Plant/operating revenue.** The generally employed test of the value of the fixed assets is the relationship between the plant valuation and the operating revenue or net sales. The relationship is expressed as "Plant/operating revenue or net sales." The ratio is an approximation of the reasonableness of the book value of the fixed assets and a test for major overstatement. It seeks to determine whether (a) the plant is overvalued in terms of income and (b) the plant is maintaining its rate of productivity.

*Railroad.* The generally accepted test of the reasonableness of investment in fixed operating assets of a railroad is that the investment in transportation property should not exceed four times the operating revenue. In the instance of the Chesapeake & Ohio Railway, the investment in transportation property of \$635,482,112 in 1944 was 2.9 times the operating revenues of \$216,536,248, compared to 2.9 times in 1943 and 3.2 times in 1942.

*Public utility.* Obviously the ratio when applied to public utility companies should vary according to the type of service provided and the facilities necessary to produce the service. Generally speaking, the plant valuation of an electric light and power company should not exceed five times the operating revenue of steam plants and ten times that of hydro plants. In other divisions of the public utility field, the following maximum standards prevail: manufactured gas, five times; telephone and telegraph, four times; water supply, ten times; street railway, five times. The Hartford Electric Light Company, a steam company, reported utility plant of \$38,263,-

613 in 1944 or 2.9 times operating revenue, compared to 3.2 times in 1943 and 3.3 times in 1942.

*Industrial.* In industrial companies mathematical convenience generally necessitates the statement of the ratio as "Net sales/net plant." This ratio expresses the number of dollars of net sales per dollar of investment in net plant and is usually referred to as the "plant turnover." National Dairy Products Corporation in 1944 reported net sales of \$593,852,943 and net plant of \$84,973,627, or \$6.98 of net sales per dollar of investment in net plant, compared to \$6.29 in 1943 and \$5.77 in 1942.

Because of wide variation in the character of industrial operations, no single standard can be established. The value of the ratio lies in the comparison over a period of years to determine whether the company is progressing by obtaining more dollars of sales per dollar of net plant investment. A downward trend, on the other hand, raises the suspicion that the plant is overvalued. In this event it is necessary to review the maintenance and depreciation policy of the company.

National Dairy Products Corporation has received an increasing number of dollars of net sales per dollar of investment in net plant. This is especially favorable when compared with Borden Company, which reported the following net sales per dollar of net plant investment:

	<i>National Dairy</i>	<i>Borden</i>
1940 . . . . .	\$3.65	\$3.23
1941 . . . . .	4 28	3.74
1942 . . . . .	5 77	4.72
1943 . . . . .	6 29	5.59
1944 . . . . .	6 98	6 33

**Capital structure.** The capital structure of a company refers to the aggregate of the bonds and stocks outstanding. It sets forth the extent of the long-term fixed-charge claims of the bondholders and of the interest of the stockholders. Analysis of the capital structure is made to determine the proportion of the capital represented by each class of security. It is important to the bondholders and to the stockholders. The larger the proportion in bonds, the weaker is the position of both the bondholders and the stockholders. The position of the bondholders is weakened by the small cushion provided by the stockholders and, at the same time, the large proportion of bond claims ahead of the stockholders reduces the strength of the latter. On the other hand, the smaller the proportion in bonds, the stronger is the position of both the bondholders and the

stockholders. The large cushion provided by the stockholders strengthens the position of the bonds and, by the same token, the position of the stockholders is enhanced by the small prior claim of the bondholders.

*Railroad.* The capital structure of a railroad company consists of bonds, capitalized lease rentals, and capital stock. Lease rentals are usually capitalized at 5 per cent on the assumption that the property controlled by the lease could have been purchased or equivalent property constructed by the lessee railroad with the proceeds of a 5 per cent bond issue. The lessee railroad preferred, however, to lease the property of the lessor railroad and to guarantee the already outstanding securities of the lessor railroad. The rent paid in the form of guaranteed interest and dividends on the securities of the lessor railroad constitute the interest which the lessee railroad would have had to pay on its own bonds. The capitalized lease rentals must be included in the capital structure in order to determine the proportion of fixed-charge obligations to capital stock. The Chesapeake & Ohio Railway, for example, reported rent for leased lines of \$49,691 in 1944 which, when capitalized at 5 per cent, represented a funded debt of \$993,820. The total capitalization of the company, therefore, was \$406,795,739, consisting of:

	1944	1943	1942
Bonds . . . . .	\$214,368,000	\$202,739,000	\$211,335,000
Capitalized rentals . . . . .	993,820	993,380	991,240
Preferred stock . . . . .			15,314,708
Common stock . . . . .	<u>191,433,919</u>	<u>191,433,919</u>	<u>191,433,919</u>
	\$406,795,739	\$395,166,299	\$419,074,867

The capital structures of American railroads have had two characteristics: (a) a large proportion in the form of funded debt and (b) the failure in many bond issues to provide for a sinking fund. The large proportion in funded debt was justified on the grounds originally that tremendous amounts of capital were required in the construction of railroads and later by the alleged basic character of the service provided by the industry and the stability of revenues. This debt, however, proved a serious burden after 1930. The omission of a sinking fund provision in most of the earlier bonds was on the assumption that at maturity they could be refunded into a new issue on favorable terms. In recent years, however, the general situation with respect to the size of the debt and sinking fund provisions has changed. Many railroads followed the policy of using wartime earnings to reduce their funded debt, with the

result that the total net amount of funded debt held by the public decreased from \$11,880,127,078 in 1930 to \$9,833,925,575 in 1943. The Interstate Commerce Commission also has insisted upon the inclusion of sinking fund provisions in new railroad bonds.

Funded debt of the Chesapeake & Ohio Railway, for example, declined from \$230,602,000 in 1936 to \$202,739,000 in 1943. During 1943 the net debt was reduced by \$8,596,000. The company paid off at or before maturity \$13,796,000 of bonds, notes, and equipment obligations and issued during the year \$5,200,000 of equipment trust certificates. While the debt on property owned December 31, 1943, was reduced by \$3,961,000 during 1944, the sale of \$15,500,000 of equipment trust obligations increased the debt to \$214,368,000 at the end of 1944. The debt at the end of 1944, however, was \$16,234,000 less than in 1936.

Analysis of the capital structure of the Chesapeake & Ohio Railway revealed the following percentage distribution:

	1944	1943	1942
Bonds and rentals . . . . .	52.9%	51.5%	50.6%
Stock . . . . .	47.1	48.5	49.4
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

The moderate capital structure of the Chesapeake & Ohio Railway in fixed obligations is in marked contrast to such railroads as the Southern Railway and the Pennsylvania Railroad. The funded debt and capitalized lease rentals of the former constitute about 60 per cent of the total capital structure. The weakness of this situation is accentuated by the fact that a large part of the debt is represented by high-coupon non-callable bonds, which precludes the prospect of refunding operations at an interest saving. The Pennsylvania Railroad has about 71.2 per cent of the total capital structure in fixed obligations. The heavy fixed-charge obligations of the road are due largely to the large rent for leased lines and to the assumed debt of subsidiaries. The total capital structure currently consists of:

	Amount	Per Cent
Funded debt . . . . .	\$644,425,247	71.2%
Capitalized rentals . . . . .	975,673,360	
Common stock . . . . .	658,387,700	28.8
	<u>\$2,278,486,307</u>	<u>100.0</u>

Generally speaking, fixed obligations ought not to exceed 50 per cent of the total capital structure.

*Public utility.* Public utility companies, like railroad companies,

also have obtained a large proportion of their capital through borrowing and for the same general reasons; namely, the large amount of capital required and the alleged stability of earning power. The amount of funded debt varies from one company to another according to the size of the company, the geographical location, and the type of utility. In determining the capital structure of a public utility company it is usual to include earned surplus as part of the stockholders' interest. Hartford Electric Light Company, for example, had a total capital structure in 1944 of \$30,693,636, consisting of \$6,895,000 in bonds and \$23,798,636 in stock and surplus. The percentage distribution was as follows:

	1944	1943	1942
Bonds . . . . .	22.4%	22.8%	22.9%
Stock and surplus . . . . .	77.6	77.2	77.1
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

The very moderate proportion of the capital structure in bonds compared favorably with the general rule that funded debt of a public utility company ought not to exceed 60 per cent of the total.

*Industrial.* In industrial companies, surplus is equally important with capital stock as a protection to the claim of the bondholders. It is frequently a very important part of the net worth, particularly in companies that give a very nominal stated value to no par value stock. In determining the amount of surplus, intangible assets, which are generally arbitrarily valued at best, must be eliminated by deducting their balance sheet valuation from the statement of surplus. Surplus shows the profits that are available for distribution as dividends (earned surplus), the profits that have been reserved for various corporate purposes (surplus reserves), and the capital surplus. In practice, however, it is difficult in many instances to determine from the title whether a reserve is truly a surplus reserve. For analytical purposes, net worth is calculated as the sum of the capital stock, earned surplus, and capital surplus. The error in such calculation is on the side of conservatism, since it tends to understate the net worth.

The total capital structure of National Dairy Products Corporation in 1944 consisted of:

	Amount	Per Cent
Bonds . . . . .	\$51,700,000	32.2
Stock . . . . .	51,266,676	67.8
Surplus . . . . .	<u>57,196,015</u>	
	<u>\$160,162,691</u>	<u>100.0</u>

The 32.2 per cent in funded debt marked a decrease from 36.5 per cent in 1943 and a corresponding rise in net worth from 63.5 per cent in 1943. Because of wide fluctuations in earnings, industrial companies can ill afford to have a large percentage of the capitalization in the form of bonds. The accepted maximum is 25 per cent. Many of the strongest companies — General Electric, International Harvester — have no funded debt at all.

**Creditors *v.* stockholders.** The analysis of the relative investment by creditors and by stockholders in an industrial company is measured by two ratios: "Net worth/total debt" and "Net worth/net fixed assets." These ratios reflect two different ways of measuring the extent to which the company is financed by the stockholders and by the creditors.

*Net worth/total debt.* Total debt of a corporation represents the aggregate debt owed to creditors, both long-term and short-term. It consists of the funded debt and the current liabilities. For example, in 1944 the total debt of National Dairy Products Corporation was \$81,587,817, consisting of \$51,700,000 of funded debt and \$29,887,817 of current liabilities. Net worth and total debt both represent the capital used in the business — net worth representing the investment of the stockholders and total debt that of the creditors. The ratio "Net worth/total debt" expresses the number of dollars of stockholders' investment supporting one dollar of debt, and thus reflects the relation of the debt to the supporting equity of the owners that must be wiped out before the creditors suffer a loss. For example, National Dairy Products Corporation in 1944 had \$108,462,691 of net worth supporting \$81,587,817 of total debt, or \$1.33 of net worth for every dollar of total debt, compared to \$1.28 in 1943 and \$1.04 in 1942. Obviously the position of both the creditors and the owners is enhanced by an increase in the net worth per dollar of total debt.

*Net worth/net fixed assets.* The ratio "Net worth/net fixed assets," on the other hand, relates the net worth to the investment in fixed assets and is based on the theory that the investment of the stockholders should be adequate to provide the fixed assets necessary to carry on the business and at least to contribute to the current assets. National Dairy Products Corporation in 1944, with net worth of \$108,462,691 and net fixed assets of \$84,973,627, had \$1.28 of net worth for every dollar of net fixed assets, compared to \$1.10 in 1943 and \$0.97 in 1942. Obviously, the greater the number of dollars of net worth per dollar of net fixed assets, the stronger is the position of the company. On the other hand a small number



of dollars of net worth per dollar of net fixed assets points to a possible overexpansion in fixed assets.

**Asset protection of debt.** A comparison of the size of the fixed obligations and of the assets upon which they have a prior claim enables the bondholder to calculate the asset protection enjoyed by the bonds. While the asset protection is subordinate to the earnings protection, nevertheless it is significant. The assets applicable to junior securities serve as a cushion against loss for the senior securities. The fixed liabilities look to the assets, both fixed and current, as protection for the debt.

*Net fixed assets/funded debt.* The extent to which the fixed assets protect the funded debt is expressed by the ratio "Net fixed assets/funded debt." Obviously, the larger the plant investment supporting the funded debt, the stronger is the position of the bonds. The ratio is often referred to as a stability ratio. In view of the multiplicity and complexity of liens in the railroad field, however, the use of the relationship is restricted to the public utility and industrial fields. The Hartford Electric Light Company's net plant investment of \$27,212,187 in 1944 was supporting \$6,895,000 of funded debt, or \$3.94 of net plant investment per dollar of funded debt. This compared with \$3.95 in 1943 and \$3.89 in 1942. Generally speaking, the net plant valuation should be at least  $1\frac{1}{2}$  times the funded debt.

National Dairy Products Corporation in 1944 had \$84,973,627 of net fixed assets and \$51,700,000 of funded debt, or \$1,643 of net fixed assets supporting \$1,000 of funded debt, compared to \$1,568 in 1943 and \$1,512 in 1942. The net fixed assets should be at least equal to the funded debt.

*Working capital/funded debt.* The ratio "Working capital/funded debt" is a recognition of (a) the greater ease in valuing the current assets as compared with the fixed assets and (b) the distinct advantage of a strong working capital position in supporting interest charges during a period of poor earnings. A strong working capital position is most advantageous to the bondholder for two reasons: (a) it makes possible the continuance of interest payments and (b) it facilitates the retirement of the principal, either by payment at maturity or by voluntary purchase of the bonds in the market. National Dairy Products Corporation, for example, in 1944 had \$83,911,472 of working capital and \$51,700,000 of funded debt, or \$1,623 of working capital per \$1,000 of funded debt, compared to \$1,302 in 1943 and \$1,004 in 1942. If bonds are to be accorded investment quality, the working capital should at least equal the funded debt.

## Review Questions

1. Indicate the relative importance of fixed assets to railroad, public utility, and industrial companies.
2. Contrast fixed and current assets from the standpoint of solvency and solidarity.
3. Discuss the nature of fixed liabilities.
4. Contrast fixed and current assets from the standpoint of valuation.
5. Discuss the analytical problem presented by the fixed assets.
6. Indicate the basic factors in the valuation of fixed assets.
7. Define book value of fixed assets.
8. Discuss the component parts of book value.
9. Explain the factors affecting book value.
10. Describe common book value write-downs
11. Contrast book value and current value of fixed assets
12. Discuss the significance of the ratios "Plant/operating revenue" and "Net sales/net plant."
13. Define capitalization and explain its calculation.
14. Discuss the significance of capitalization to creditors and to owners.
15. Explain the calculation of the total capitalization of a railroad company.
16. Indicate the characteristics of railroad capitalization.
17. Describe the method of analyzing railroad capitalization.
18. Explain the calculation of the total capitalization of a public utility company.
19. Describe the method of analyzing public utility capitalization.
20. Explain the calculation of the total capitalization of an industrial company.
21. Discuss the problem of surplus reserves in the calculation of net worth of an industrial company.
22. Indicate the relation of net worth to present worth of an industrial company.
23. Discuss the significance of the ratio "Net worth/total debt"
24. Explain the significance of the ratio "Net worth/net fixed assets."
25. Discuss the significance of the ratio "Net fixed assets/funded debt."
26. Compare the significance of the ratio "Net fixed assets/funded debt" in the analysis of railroad, public utility, and industrial companies.
27. Discuss the significance of the ratio "Working capital/funded debt" in the analysis of the funded debt of an industrial company.

## Assignment

- (a) Determine the reasonableness of the book value of the fixed assets from the following data:

	<i>This Year</i>	<i>Last Year</i>
(1) RAILROAD:		
Investment in Transportation Property . . .	\$ 478,233,014	\$ 471,965,484
Operating Revenue . . . . .	214,779,541	208,799,302
(2) PUBLIC UTILITY:		
Utility Plant . . . . .	\$ 351,199,302	\$ 350,328,923
Operating Revenue . . . . .	83,547,517	88,664,458

## (3) INDUSTRIAL:

Net Plant . . . . .	\$ 298,549,884	\$ 327,229,678
Net Sales . . . . .	4,262,249,472	3,796,115,800

## (b) Indicate the capital structure of a railroad from the following data:

## Balance Sheet:

Capital Stock . . . . .	\$562,332,486
Funded Debt . . . . .	612,719,371

## Income Statement:

Rent for Leased Roads . . . . .	20,753,411
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## (c) Compute the net worth of an industrial company from the following data and determine (1) the amount of stockholders' investment supporting a dollar of total debt and (2) the working capital per dollar of funded debt:

6 % Preferred Stock . . . . .	\$ 2,000,000
7 % Preferred Stock . . . . .	6,550,500
Earned Surplus . . . . .	9,065,682
Current Liabilities . . . . .	18,332,614
Common Stock . . . . .	14,024,670
Funded Debt . . . . .	17,000,000
Capital Surplus . . . . .	2,968,643
Current Assets . . . . .	48,454,270

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## CHAPTER NINETEEN

# ANALYSIS OF INCOME STATEMENT

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**Introduction.** Analysis of the income statement involves three considerations: earning power, fixed charges, and dividends. Analysis of earning power requires an examination of the profit-producing capacity of the company — the real worth of the company. The adequacy of the profit should be related to the volume of business and to the amount of invested capital. Analysis of fixed charges involves consideration of the adequacy with which the fixed charges are earned. Analysis of dividend payments involves a study of both the relationship between the net income available and the dividends paid and of the dividend record of the company over a period of years.

**Operating revenue or net sales.** Analysis of the operating revenue or net sales involves consideration of changes both in the total amount and in the sources of revenue or sales. The trend of those changes and the extent of the changes is usually measured in percentages.

**Railroad.** Inasmuch as railroads secure their revenue from the transportation of traffic within a given territory, the volume and the character of the traffic as well as the profitableness of operation depend upon the nature of the territory. Analysis of the territory involves consideration of such factors as size, physical features, diversity of population, natural resources, and manufacturing and commercial activities. The distance over which traffic may be carried is limited by the size of the territory served. Since long-haul traffic is relatively more profitable than short-haul traffic, railroads which serve extended areas such as the Pennsylvania and the Atchison, Topeka & Santa Fe have an operating advantage over those serving smaller areas such as the New Haven and the Pere Marquette. Though a densely populated area usually means commercial and industrial activity, which provide heavy freight traffic, it also

usually provides heavy passenger traffic, which is relatively less profitable. The character of the traffic usually reflects the natural resources and the manufacturing and commercial activities of the territory. A territory that enjoys a high degree of activity and a broad diversification of enterprise generally provides a more profitable and a more reliable source of traffic than one that is rich in natural resources.

During the period 1942-1944 the operating revenue of Chesapeake & Ohio Railway increased from \$181,809,762 to \$216,536,248. The increase in the operating revenue, however, was at a decreasing rate.

	<i>Operating Revenue</i>	<i>Percentage Increase</i>
1942 . . . . .	\$181,809,762	21%
1943 . . . . .	208,512,535	15
1944 . . . . .	216,536,248	4

*Sources of operating revenue.* The operating revenue of a railroad is obtained from the transportation of freight, passenger, mail, express, and miscellaneous traffic. Freight traffic is the predominant source of operating revenue to all Class 1 railroads, providing approximately 80 per cent of the total revenue, whereas passenger traffic yields about 10 per cent. On the Chesapeake & Ohio Railway, freight traffic has provided approximately 87 per cent and passenger traffic about 9 per cent of the road's operating revenue.

*Sources of freight traffic.* Freight traffic is classified according to the nature of the products carried as agriculture, animal, forest, mines, manufacturing and miscellaneous, and less-than-carload (L.C.L.) freight. Obviously, the relative importance of the various types of freight to any railroad depends upon the nature of the territory the railroad serves. Some railroads, such as the Atchison, Topeka & Santa Fe, have a fairly well diversified traffic, whereas others, such as the Chesapeake & Ohio, depend largely upon one type of freight. The freight traffic of the Santa Fe is diversified among manufactures (37 per cent), products of mines (27 per cent), and agricultural products (22 per cent). On the other hand, the Chesapeake & Ohio serves the rich bituminous coal mining areas of Virginia, West Virginia, and eastern Kentucky, which accounts for the fact that coal provides more than 76 per cent of its freight tonnage, 65 per cent of its freight revenue, and 55 per cent of its operating revenue. It originates more bituminous coal than any other railroad. It handles approximately 75,000,000 tons of coal annually of which about 85 per cent is originated and 15 per cent is

received from connecting lines. Normally 75 per cent of the coal moves westward to the Great Lakes and central west, while the remainder moves eastward to Newport News for trans-shipment along the industrial seaboard. The railroad serves great coal-consuming markets along its own lines from the Great Lakes to the Atlantic Ocean and, through its connections, it has ready access to other great centers of population and industry. These ready markets, together with the perennial demand for coal in good times and in bad times, have produced a stability of income. The dependence of the road largely upon one type of freight traffic is evidenced by the following classification of tonnage expressed in percentages:

	1944	1943	1942
Agriculture . . . . .	22%	21%	16%
Animal . . . . .	6	4	4
Forests . . . . .	20	20	22
Mines . . . . .	82.4	83.3	84.0
Mfg. and Misc . . . . .	12.3	11.6	11.2
L.C.L. . . . .	5	.6	6

Products of mines account for approximately 83 per cent of the total tonnage.

Changes in the nature of the territory served affect the character of the traffic carried. For example, improvement of port facilities at Mobile, Alabama, and the industrial growth in the South, particularly during the war years, were instrumental in the better diversification of revenue tonnage carried by the Gulf, Mobile & Ohio Railroad. Agricultural and lumber traffic, which formerly accounted for about 50 per cent of freight revenue of the railroad, gave way to increased manufactures and miscellaneous revenues. In 1941, the first full year of operation for the consolidated system, products of agriculture accounted for 15.7 per cent of freight revenues, forest products 24.3 per cent, and manufactures and miscellaneous 43.4 per cent.

*Traffic density.* A common measurement of the volume of freight traffic per mile of road is expressed as "traffic density." This measurement gives consideration to volume of traffic (in terms of tons carried), distance carried (in terms of the average distance each ton was hauled), and the miles of line operated in the transportation of freight. Specifically, it is expressed as "Total tons carried  $\times$  Average distance per ton/Miles of line operated." The Chesapeake & Ohio Railway carried 102,470,851 tons of revenue freight an average distance of 280.50 miles for a total of 28,743,073,706 ton-miles in 1944. The road operated an average of 3,032.83 miles, or a freight

traffic density of 9,447,311, as against a freight traffic density of 9,090,881 in 1943 and 8,399,475 in 1942.

An increase in traffic density indicates an increase in the number of tons carried, or an increase in the average distance hauled, or a decrease in the number of miles operated. In any event, an increase in freight traffic density is indicative of a more intensive use of the miles of line operated. The Pennsylvania Railroad stands only fourth among American railroads in respect to length of main line, but it operates over the densest traffic territory in the world. With only 4.7 per cent of the country's line mileage, it carries more than 11 per cent of total rail freight traffic. Although the Erie Railroad originates only about 40 per cent of total tonnage handled, revenue freight density is heavier than that of the New York Central Railroad and of the Baltimore & Ohio Railroad and only moderately below that of the Pennsylvania Railroad, primarily because of favorable connections with other railroads. On the other hand, the traffic density of the Chicago, Rock Island & Pacific Railway and of the St. Louis-San Francisco Railway is normally relatively light.

*Revenue per ton-mile.* While the traffic density is important as a measure of the transportation service rendered by the railroad, equally important is the profitableness of the traffic. A high traffic density representing a large amount of low-grade freight may not be as profitable as a lower traffic density consisting largely of high-grade freight. The relative profitableness of freight traffic is usually measured in terms of "revenue per ton-mile" and represents the movement of a ton of revenue freight over one-mile. The Chesapeake & Ohio Railway received \$184,876,712 of revenue in 1944 by the transportation of freight 28,743,073,706 ton-miles, or 6.4 mills of revenue per ton-mile; compared to 6.5 mills in 1943 and 6.4 mills in 1942. It is low, however, when compared with the average revenue per ton-mile for other railroads:

	<i>Class 1.</i>	<i>C &amp; O</i>	<i>Penn</i>	<i>N. Y. Central</i>	<i>Illinois Central</i>	<i>Union Pacific</i>
1942 . .	9 3 mills	6 4 mills	9.1 mills	8.7 mills	7 4 mills	10.4 mills
1943 . .	9.3	6.5	9.2	8.8	7.7	10.2
1944 . .	9 5	6.4	9.5	9.0	8 0	10.2

The low average revenue per ton-mile for the Chesapeake & Ohio Railway is due largely to the predominance of coal, which is considered low-grade freight. The Pennsylvania Railroad and the New York Central Railroad, on the other hand, carry a much larger

amount of high-grade freight and therefore receive more revenue per ton-mile.

The extent to which severe competition in the territory served may affect the revenue per ton-mile is illustrated by the Illinois Central Railroad. Although the railroad has an average haul of about 250 miles, which is better than the average for other railroads, the average rate per ton-mile is lower than for all Class 1 railroads, partially because of severe competition. The St. Louis-San Francisco Railway also is subject to keen competition from motor vehicles, pipe lines, and other rail routes, while the Western Pacific Railroad encounters competition from motor vehicles, coastal ships, and other rail routes. On the other hand, the Union Pacific Railroad has not been subject to so severe truck competition as other railroads, partly because of the long-haul type of traffic handled and the fact that the mileage traverses the Rocky Mountain range. The average haul has been approximately 500 miles, which is much longer than for any other railroad in the country. This has been reflected in the better-than-average revenue trends of the Union Pacific compared with Class 1 railroads in the central western region and in the entire United States.

**Public utility.** The analysis of the territory served by a public utility is as important as a similar analysis for a railroad. Unlike railroads, which cover wide areas, public utilities operate only within a prescribed territory and, as a result, their opportunity to prosper is definitely limited to an extremely small area. Analysis of the territory served involves consideration of geographic location, population, and resources. Geographic location has important economic and physical aspects. The proximity to established channels of trade provided by the harbors of New York, Boston, Baltimore, Los Angeles, and San Francisco and by the excellent water and rail facilities of Chicago, Cleveland, and Detroit give those cities a distinct economic advantage. The Consolidated Gas, Electric Light & Power Company of Baltimore, Maryland, for example, operates not only in the city of Baltimore, but also over a wide surrounding area. The territory is favored by excellent port facilities, the port of Baltimore being the third largest in the United States from the standpoint of tonnage. Located at the center of the Atlantic seaboard, with rail access to the Middle West, the region has developed an unusual diversification of trade and industrial activity. The territory contains the Sparrows Point plant of the Bethlehem Steel Company (one of the largest tidewater steel



plants in the world), a large copper refinery of the American Smelting & Refining Company, and a major plant of the Western Electric Company.

Some territories are primarily industrial while others are commercial, agricultural, or residential. Detroit Edison Company, for example, serves one of the most highly industrialized sections of the country, a section that includes not only the city of Detroit but also Dearborn, Ann Arbor, East Detroit, Hamtramck, Grosse Pointe, Highland Park, River Rouge, and Port Huron. On the other hand, Idaho Power Company serves a distinctly agricultural section. As a rule, industrial and commercial territories offer better markets to utility companies than do agricultural or residential areas. The chief advantage of the large community, however, lies in the diversity of resources which is basic to stability of demand for utility service.

The Hartford Electric Light Company is engaged in the generation and distribution of electricity in north central part of Connecticut, serving an area of 205 square miles and a population of 249,000. Insurance and related businesses provide the principal occupation for the population. The company provides electricity at retail to eleven communities of which Hartford, West Hartford, and East Hartford are the most important. It also sells power at wholesale to the Connecticut Power Company, the Connecticut Light & Power Company, and the Ensign-Bickford Company. The increase in operating revenue is shown by the following:

	<i>Operating Revenue</i>	<i>Percentage Increase</i>
1942 . . .	\$11,335,667	11 8%
1943 . . .	11,922,489	5 3
1944 . . .	12,952,806	8.4

*Sources of operating revenue.* Some companies, such as Boston Edison Company and Chicago District Electric Generating Company, generate power and wholesale it to distributing companies, while other companies, such as New York & Queens Light & Power Company, purchase power and retail it. Hartford Electric Light Company, however, generates electric current which it sells both at wholesale and at retail. The operating revenue of Hartford Electric Light Company consists of sales of electric current at retail and to other electric corporations and of miscellaneous operating revenues. While local sales at retail constitute the most important source of operating revenue, such sales decreased in importance relative to sales to other electric corporations at wholesale.

	1944		1943		1942	
	<i>Amount</i>	<i>%</i>	<i>Amount</i>	<i>%</i>	<i>Amount</i>	<i>%</i>
Local sales . . . .	\$9,992,457	77.5	\$9,697,696	81.5	\$9,644,426	84.9
Other electric corporations . . . .	2,957,023	22.5	2,222,089	18.5	1,671,766	15.1
	<u>\$12,949,480</u>	<u>100.0</u>	<u>\$11,919,785</u>	<u>100.0</u>	<u>\$11,316,192</u>	<u>100.0</u>

Retail sales are classed as industrial, commercial, and domestic. Industrial sales represent the demand for light and power at wholesale by manufacturing establishments, mines, and foundries. In general the industrial market consumes about half of the kilowatt-hours of electric energy produced annually.<sup>1</sup> Commercial sales are to such consumers as retail stores, offices, and theaters and are principally for lighting purposes. Domestic sales represent the consumption by homes for lighting and for the operation of such household equipment as refrigerators, ranges, water heaters, radios, and irons.

Industrial rates are generally low, largely because of the potential danger of industrial companies establishing their own power plants. Sales for residential and commercial consumption, on the other hand, are more profitable than industrial sales. The domestic load for lighting in the evening and the current used by other domestic and commercial appliances supplements the demands of industry during the day. By the same token, the industrial demand absorbs the greater part of the expenses and thus reduces the cost of serving the high-rate residential and commercial load.

As a rule, domestic retail sales represent the most stable source of revenue and industrial retail sales the least stable. While the industrial demand is the first to decline in periods of depression, it is the first to respond to improved business conditions. Inasmuch as stability of revenues, especially during periods of business depression, is of the utmost importance to public utility companies, a large proportion of the more stable domestic or residential business is preferable to the more fluctuating industrial business. The retail sales of electric current by the Hartford Electric Light Company have been as follows:

	1944		1943		1942	
	<i>Amount</i>	<i>%</i>	<i>Amount</i>	<i>%</i>	<i>Amount</i>	<i>%</i>
Industrial . . . . .	\$3,473,860	34.7	\$3,473,262	36.1	\$3,252,588	34.3
Commercial . . . . .	3,003,553	30.0	2,791,304	28.8	2,937,655	30.2
Domestic . . . . .	3,160,967	31.6	3,080,877	31.9	3,107,044	32.3
Street lighting . . . .	354,077	3.7	352,253	3.2	347,140	3.2
	<u>\$9,992,457</u>	<u>100.0</u>	<u>\$9,697,696</u>	<u>100.0</u>	<u>\$9,644,427</u>	<u>100.0</u>

<sup>1</sup> A kilowatt-hour represents 1,000 watts for one hour.

The company has a fairly well diversified market in industrial, commercial, and domestic sales.

For companies that sell more than one type of service, such as the Public Service Electric and Gas Company of New Jersey, the operating revenues may be analyzed according to the type of service. This company derives approximately 75 per cent of operating revenue from electric sales and 25 per cent from the sale of gas.

**Industrial.** Analysis of an industrial company involves consideration of its market and operating conditions. Unlike railroad and public utility companies, which operate within defined areas, industrial companies may serve national and even international markets. Industrial companies may differ in the stability of demand for their products, in the degree to which they have diversified their products, and in the extent to which they must meet with competitive conditions. In view of the absence of public regulation and of uniformity in operating conditions, the management factor is of unusual importance in the analysis of industrial companies. The basic test of efficiency of management is stability of earning power.

Changes in the net sales of an industrial company may be due to a change in the number of units of product sold, or to a change in the selling price per unit, or to both. The net sales of National Dairy Products Corporation increased but at a decreasing rate in 1943 and 1944, in line with the trend experienced by the Borden Company. The annual rate of increase, however, was lower than that of the Borden Company.

	<i>National Dairy</i>		<i>Borden</i>	
	<i>Net Sales</i>	<i>% Increase</i>	<i>Net Sales</i>	<i>% Increase</i>
1942 . . . . .	\$562,451,639	30.4	\$325,350,306	25.5
1943 . . . . .	580,173,068	3.1	371,866,527	14.3
1944 . . . . .	593,852,943	2.3	410,478,189	10.4

Regardless of changes in total sales, sometimes very important changes occur in the source of total sales. While the Diamond Match Company is a dominant factor in the American match industry, it also has diversified interests in lumber, building materials, and chemicals, and in the manufacture of woodenware and pulp and paper products. The sale of matches, which at one time constituted more than half of the sales, has since declined in importance and now provides less than half of the sales.

**Operating ratio.** The operating ratio refers to the relation of operating expenses to operating revenue or net sales. This relationship is expressed as "Operating expenses/operating revenue or net

sales" and indicates the expenses incurred per dollar of operating revenue or net sales. The ratio is commonly used to measure the operating efficiency of the management, on the theory that efficient management results in a stable or decreasing operating ratio.

Operating ratio, however, is subject to distinct limitations. Operating expenses may be classed as fixed and variable. While theoretically a rising ratio should reflect decreased efficiency, actually it may reflect the effects of a business depression. Managements have found that in a period of declining sales, operating expenses cannot always be reduced proportionately and there is a minimum below which fixed operating expenses cannot be reduced. On the other hand, while theoretically a decrease in the ratio would reflect greater efficiency, it may actually reflect a deliberate curtailment by the management of such variable expenses as maintenance or depreciation in an effort to report a more favorable operating profit. The operating ratio must be judged in terms of the average operating ratio for the industry.

**Railroad.** The operating ratio of a railroad is the ratio of all operating expenses, excluding taxes, to operating revenue. The Chesapeake & Ohio Railway in 1944 had operating expenses of \$136,866,850 and operating revenue of \$216,536,248, and the operating ratio was 63.2 per cent, compared to 55.2 per cent in 1943 and 52.5 per cent in 1942. The Chesapeake & Ohio Railway had a relatively low operating ratio in comparison with the average for all Class 1 roads.

	<i>C &amp; O</i>	<i>Class 1 Roads</i>
1942 . . . . .	52.5	61.6
1943 . . . . .	55.2	62.4
1944 . . . . .	63.2	66.6

On the other hand, the operating ratio of the New York Central Railroad of 74.4 per cent in 1944 and of 67.6 per cent in 1943 was somewhat higher than the average for Class 1 railroads because of the relatively high expense of handling passenger business and the large amount of light-density branch mileage.

It is not practical, however, to set up a maximum standard for the operating ratio, because some component parts should be large while others should be small. Analysis of the operating ratio involves consideration of the transportation ratio and the maintenance ratio.

**Transportation ratio.** The transportation ratio is expressed as "Transportation expense/operating revenue" and seeks to measure the relation of direct operating expenses to operating revenue.

Obviously, a low transportation ratio for a railroad is an excellent commendation. The transportation expenses of the Chesapeake & Ohio Railway in 1944 amounted to \$57,561,573, or 26.6 per cent of operating revenue, compared to 23.5 per cent in 1943 and 23.0 per cent in 1942. It averaged 24.4 per cent for the period 1942-1944, compared to an average of 30.4 per cent for Class 1 railroads. Such railroads as Chesapeake & Ohio and Norfolk & Western are able to report a low transportation ratio largely because of their favorable location. All roads in the Pocahontas District benefit from the proximity to the leading coal-mining regions, since they not only buy fuel cheaply but carry to other users a commodity that can be moved with maximum economy.

*Maintenance ratio.* The transportation ratio is closely related to the maintenance ratio. Large expenditures for maintenance should increase the efficiency of the railroad and consequently reduce the transportation ratio. By the same token, skimping on maintenance reduces the efficiency and increases the transportation ratio. For this reason, therefore, analysis of maintenance and transportation expense is necessary in interpreting the operating ratio. An operating ratio of 76 per cent of which maintenance represents 41 per cent is preferable to an operating ratio of 70 per cent of which maintenance represents 28 per cent. For example, in the following situation, Railroad A has a higher operating ratio than Railroad B,

	RR. A	RR B
Operating Ratio . . . . .	76 %	70 %
Maintenance — W. & S. . . . .	18	10
Maintenance — Equip. . . . .	23	18
Transportation . . . . .	30	36
Traffic & General . . . . .	5	6

yet analysis of the maintenance ratio reveals that Railroad A is reinvesting a considerably larger percentage of operating revenue in way and structures and in equipment than Railroad B. This is also reflected in the lower transportation ratio enjoyed by Railroad A. A commonly accepted standard operating ratio is 72-75 per cent in which maintenance is at least 32 per cent. The increase in the operating ratio of the Chesapeake & Ohio Railway has been due largely to the increase in the maintenance ratio.

	Operating Ratio	Maintenance Ratio	Transportation Ratio
1942 . . . . .	52.5	25.5	23.0
1943 . . . . .	55.2	27.4	23.5
1944 . . . . .	63.2	32.1	26.6

One of the important contributing factors to the better-than-average percentage of operating revenue carried down to net railway operating income of the Louisville & Nashville Railroad has been the reduction in transportation expense, a good measure of operating efficiency.

**Public utility.** The inelastic rate structure of public utilities generally causes operating expenses to rise and decline with greater rapidity than operating revenue. While the operating ratio tends to fall in a period of slowly falling prices, a pronounced decline in operating revenue may more than offset the decline in operating expenses with a consequent rise in the operating ratio. The operating ratio of Hartford Electric Light Company was 80.8 per cent in 1944, compared to 78.9 per cent in 1943 and 79.6 per cent in 1942. Analysis of the factors influencing this decrease involves consideration of maintenance, depreciation, taxes, and miscellaneous operating expenses in relation to operating revenue:

	<i>Maintenance</i>	<i>Depreciation</i>	<i>Taxes</i>	<i>Other Expenses</i>	<i>Operating Ratio</i>
1942 . . .	35%	6.3%	24.7%	45.1%	79.6%
1943 . . .	4.5	4.6	21.8	48.0	78.9
1944 . . .	4.9	4.5	23.0	48.4	80.8

The commonly accepted maximum operating ratios are: steam electric plant, 70 per cent; hydro electric plant, 55 per cent; manufactured gas, 80 per cent; telephone and telegraph, 75 per cent; water, 40-50 per cent; traction, 80 per cent.

Companies that sell more than one type of service and report operating revenues and deductions applicable to each type provide the investor with a means of measuring the profitableness of each type of operation. The operating ratio of the Public Service Electric and Gas Company of New Jersey is broken down according to departments — electric and gas.

To determine whether changes in the operating ratio have been due largely to changes in the maintenance and depreciation policy, the two ratios must be related. The operating ratio of Hartford Electric Light Company increased from 78.9 per cent in 1943 to 80.8 per cent in 1944. The increase was due to an increase in maintenance, taxes, and other operating expenses.

**Industrial.** The operating ratio of industrial companies varies according to the industry. In some industries, such as meat-packing, chain stores, and mail-order houses, a high inventory turnover permits some companies to show satisfactory profits despite a high operating ratio. Few industrial companies, however, report an

operating ratio under 80 per cent. National Dairy Products Corporation in 1944, with operating expenses of \$543,142,958 and net sales of \$593,852,943, reported an operating ratio of 91.4 per cent, compared to 92.0 per cent in 1943 and 93.3 per cent in 1942. The Borden Company reported an operating ratio of 92.1 per cent in 1944 as against 93.2 per cent in 1943 and 94.6 per cent in 1942.

Inasmuch as maintenance and depreciation are such variable factors in industrial companies, analysis of the operating ratio involves consideration of those charges. The operating ratio of National Dairy Products Corporation declined from 93.3 per cent in 1942 to 91.4 per cent in 1944, in spite of an increase in maintenance and depreciation from 3.1 per cent in 1943 to 3.3 per cent in 1944.

**Operating profit.** The net operating income or profit represents the excess of operating revenue or net sales over operating expenses. It is the balance from operations which, together with other income, is available for the payment of fixed charges and preferred and common stock dividends.

**Non-operating income.** The three general sources of non-operating income to a company are temporary investments, permanent investments, and property. Marketable securities carried as current assets usually consist of federal, state, and municipal bonds, which afford a source of constant though not substantial income. Investments in subsidiary companies, consisting of bonds but more usually of stock, may represent a fairly constant and possibly important source of income. Patents, processes, or real property leased to other companies on a royalty or rental basis sometimes provide a fairly substantial income. A report of General Electric Company, for example, lists numerous sources of non-operating income:

Interest and dividends from affiliated companies and miscellaneous investments . . . . .	\$13,024,505
Income from marketable securities . . . . .	1,063,202
Interest on bank balances and receivables . . . . .	225,898
Royalties and sundry revenue-net . . . . .	1,758,703
	<u>\$16,072,308</u>

Analysis of non-operating income is important to determine the extent to which it (a) is recurring or non-recurring and (b) acts as a cushion to the stability of total income. Non-operating income may be of a recurring nature — income received annually with a relatively high degree of certainty — or of a non-recurring nature — income derived currently and not likely to recur. For example, Union Pacific Railroad has received an average annual non-operating income of approximately \$18,000,000 in recent years, largely in the

form of dividends and interest and from such miscellaneous operations as Sun Valley resort facilities, oil wells, and other sources. The Southern Pacific Company has extensive interests in traction, lumber, oil, coal, real estate, bus, truck, and miscellaneous enterprises, including a 50 per cent control of the profitable Pacific Fruit Express Company. Those interests provide important sources of non-operating income, which has averaged \$8,000,000 in recent years, equal to more than one third of the annual fixed charges. Although the Pennsylvania Railroad system has a large capitalization, the debt structure is not so heavy as it appears on the surface because of its extensive holdings of leased line securities. About \$27,000,000 of the \$49,000,000 charged to rent for leased roads is returned to the parent company as interest and dividend income. Du Pont & Company also receives substantial recurring other income, most of which is in the form of dividends on its General Motors common stock. The General Motors dividend in recent years has averaged about \$23,000,000 and has represented 89 per cent of the total non-operating income. General Electric Company derives considerable recurring non-operating income largely in the form of interest and dividends from affiliated companies and miscellaneous investments. This non-operating income has averaged approximately \$13,000,000 in recent years. The sizable recurring non-operating income of Cluett, Peabody & Company is received primarily in the form of royalties on the Sanforizing process, which average about 25 per cent of total non-operating income.

- Non-recurring non-operating income, on the other hand, is income currently received but not likely to recur. For instance, United States Steel Corporation obtained a reported profit of \$7,000,000 from the sale of Gary Heat, Light & Power Company, and Swift & Company gained a reputed profit of \$7,500,000 from the sale of refrigerator cars and other assets. Johns-Manville Corporation in one year received \$560,000 in dividends from Johns-Manville Credit Corporation. Inasmuch as this dividend was paid out of the earnings of the subsidiary for the previous three and one-half years, it could not be considered in its entirety as a recurring non-operating income, as confirmed by the fact that the dividend received from the subsidiary the following year was only \$150,000. The disposition of investments may also affect non-operating income. As a result of the sale of 100,000 shares each of preferred and common stocks of the Michigan Sugar Company by the American Sugar Refining Company, income from investments for the latter company



declined from \$647,939 in the year preceding the sale to \$386,676 in the year following the sale.

Non-recurring non-operating income may be important to the investor in any one year, but its long-term importance is limited by the very fact that it is non-recurring. On the other hand, recurring non-operating income is important in that it is recurring. During the period 1925-1944 Du Pont & Company reported average net income of \$310,500,000, of which \$131,600,000 or 42.3 per cent was derived from the General Motors investment.

The non-operating income received by Chesapeake & Ohio Railway and by National Dairy Products Corporation has been increasing while that of Hartford Electric Company has decreased:

	<i>C &amp; O</i>	<i>National Dairy</i>	<i>Hartford</i>
1942 . . . . .	\$1,816,109	\$1,305,767	\$159,561
1943 . . . . .	1,895,444	1,311,023	156,536
1944 . . . . .	1,967,365	1,718,465	145,969

*Non-operating income/total income.* The extent to which non-operating income acts as a cushion to the stability of total income is measured by the ratio "Non-operating income/total income." Obviously, the higher the percentage the greater is the cushion. Generally speaking, however, non-operating income is seldom a substantial cushion, since stockholders depend primarily upon operating income for dividends.<sup>2</sup> The primary difference between companies lies in the extent to which non-operating income acts as a cushion. Non-operating income is of minor significance to the stockholders of Chesapeake & Ohio Railway, Hartford Electric Light Company, and National Dairy Products Corporation, as evidenced by the following percentages of non-operating income to total income:

	<i>C &amp; O</i>	<i>Hartford</i>	<i>National Dairy</i>
1942 . . . . .	4.6%	8.0%	3.4%
1943 . . . . .	4.8	7.7	2.7
1944 . . . . .	5.8	6.0	3.2

**Income available for fixed charges.** The total income, derived as operating profit and as non-operating income, is usually subject to certain miscellaneous deductions. The balance after those deductions is the amount available for the payment of the fixed charges. Strictly speaking, the income available for fixed charges in an industrial company is the income before income taxes, but it is the usual practice to consider the income available after taxes. Obviously,

<sup>2</sup> Non-operating income of the Union Pacific Railroad declined from \$21,598,473 in 1929 to \$12,518,455 in 1936.

it gives a more conservative result. The investor wishes assurance that the income is not only sufficient but adequate to provide a margin of safety. A company whose income available for fixed charges is just enough to pay the fixed charges would face possible default should it suffer a reduction in gross revenue or an increase in operating expenses or both.

*Times fixed charges earned.* The adequacy with which the fixed charges have been earned is determined by the ratio "Income available for fixed charges/fixed charges," more generally referred to as the "Times fixed charges earned." A company with \$10,500,000 available for fixed charges and fixed charges of \$4,600,000 has earned the fixed charges 2.3 times ( $\$10,500,000/\$4,600,000$ ). On the other hand, a company that has available only \$5,700,000 with which to meet fixed charges of \$3,900,000 has earned the fixed charges 1.4 times ( $\$5,700,000/\$3,900,000$ ). Obviously, the greater the number of times the fixed charges have been earned, the stronger is the position of the bondholders.

*Fixed charges/operating revenue or net sales.* Since in most companies the basic source of income with which to meet the fixed charges is operating revenue or net sales, the fixed-charge burden should be related to operating revenue or net sales. The ratio "Fixed charges/operating revenue or net sales" measures the extent to which the fixed charges are a burden upon the operating revenue or net sales. The fixed charges reflect the financial policy of the company in raising capital through the sale of bonds or notes. Since those charges remain relatively fixed while operating revenue or net sales are subject to change, it is essential, from the standpoint of the bondholder, that fixed charges bear a reasonable relationship to the operating revenue or net sales. Obviously, the greater the degree of stability in operating revenue or net sales, the larger is the percentage of fixed charges which the company can afford to assume; conversely, the greater the fluctuations to which the operating revenue or net sales are subject, the lower is the appropriate percentage in fixed charges.

The dependence of fixed charges upon operating revenue was illustrated in the experience of the Baltimore & Ohio Railroad bondholders. Heavy fixed charges in relation to earnings and large near-term maturities made it necessary for the railroad in 1938 to modify interest charges and to extend maturities. Under the plan of adjustment, over \$166,300,000 of near-by maturities were extended for a period of from five to ten years and fixed interest charges of the

company and its subsidiaries were modified for a period of eight years. As a result, \$19,600,000 of annual charges remained fixed and \$11,400,000 was made contingent on earnings.

*Railroad.* The Chesapeake & Ohio Railway in 1944 reported \$34,456,780 available to pay fixed charges of \$7,115,784, or sufficient to pay the fixed charges 4.8 times, compared to 5.2 times in 1943 and 5.1 times in 1942. During the period 1942-1944 the company earned the fixed charges an average of 5.0 times, compared to an average of 2.4 times for Class 1 roads. The usual minimum requirement is an average of 1.5 times for a period of five years.

In general, the fixed charges of a railroad ought not to exceed 12 per cent of the operating revenue. The fixed-charge burden of the Chesapeake & Ohio Railway does not rest heavily upon operating revenue, as evidenced by the fact that the fixed charges represented 3.3 per cent of the operating revenue in 1944, compared to 3.5 per cent in 1943 and 4.4 per cent in 1942.

*Public utility.* The Hartford Electric Light Company in 1944 had \$2,624,612 available for interest charges of \$264,748, or sufficient to meet the fixed charges 9.9 times, compared to 10.7 times in 1943 and 9.0 times in 1942. The income available for the payment of the fixed charges should be at least twice the fixed charges.

Generally speaking, fixed charges should not exceed 12 per cent of the operating revenue for a steam electric plant, a manufactured gas plant, and a telephone or telegraph company; 15 per cent for a street railway company; and 20-30 per cent for a water company. The fixed charges of the Hartford Electric Light Company were a minor burden upon the operating revenue, representing 2.0 per cent in 1944, 2.0 per cent in 1943, and 2.4 per cent in 1942.

*Industrial.* National Dairy Products Corporation in 1944 reported income of \$48,117,028, or sufficient to pay the fixed charges of \$1,798,740 approximately 26.7 times, compared to 23.1 times in 1943 and 16.3 times in 1942. The more common and conservative practice in industrial analysis, however, is to compute the "Times fixed charges earned" after federal income taxes. The income available for fixed charges after the payment of federal taxes in 1944 amounted to \$15,117,028, or 8.4 times fixed charges, compared to 7.8 times in 1943 and 7.2 times in 1942. The fixed charges should be earned an average of at least three times over a period of five years.

The fixed charges in an industrial company ought not to exceed 3 per cent of the net sales. Fixed charges of National Dairy Products Corporation were a negligible burden on net sales representing only

0.3 per cent of net sales in each of the three years under consideration.

**Net income.** Net income is the balance of earnings after fixed charges and taxes and is the amount available for distribution to the stockholders as dividends. It represents the return on the stockholders' investment. This rate of return is usually measured in an industrial company by the ratio "Net income/net worth." The net income of National Dairy Products Corporation in 1944 of \$13,238,288 represented a return of 12.1 per cent on the net worth of \$108,462,691, compared to 12.8 per cent in 1943 and 11.9 per cent in 1942.<sup>3</sup>

The ratio "Net income/net worth," especially when used in comparing two years, may be open to a distortion created by any increase in funded or unfunded debt. A rise in the return on net worth may be due either to increased earning power on the present capital or to additional capital upon which more net income has been earned. Additional borrowing by a company will increase the total funds in the business without affecting net worth, yet the use of such additional funds should increase net income. For example, assume Company A borrows \$3,000,000 during 1945:

	1945	1944
Net Income . . . . .	\$2,000,000	\$1,000,000
Net Worth . . . . .	\$10,000,000	\$10,000,000
Net Income/Net Worth . . . . .	20.0%	10.0%

The net income rose from \$1,000,000 to \$2,000,000 and the rate of return from 10 per cent to 20 per cent. In 1945, however, the company had \$3,000,000 additional capital upon which to earn more income. The ratio "Net income/total assets" is used, therefore, to check upon any distortion that may arise from the use of increased funds through borrowing. A rise in the ratio "Net income/net worth" accompanied by a decline in the ratio "Net income/total assets" may indicate increased borrowed funds rather than increased earning power. For example, during the period 1934-1940, the ratio "Net income/net worth" for International Business Machines Corporation increased, whereas the ratio "Net income/total assets" decreased. The continuous rise in the former ratio was due in part to the financing through the sale of bonds beginning in 1936 which

<sup>3</sup> According to a study made by the National City Bank of New York (*Monthly Bulletin*, August, 1945) for the period 1925-1944, net income averaged 11.6 per cent of net worth for dairy products companies and 8.2 per cent for approximately 1,300 industrial companies.

increased the total funds as indicated by the decline in the latter ratio.

	<i>Net Income/ Net Worth</i>	<i>Net Income/ Total Assets</i>	<i>Funded Debt</i>
1934 . . . .	14 5%	12.3%	None
1935 . . . .	15 0	12 2	None
1936 . . . .	15 3	11 5	\$10,000,000
1937 . . . .	15 4	10.9	15,000,000
1938 . . . .	15.6	11.1	15,000,000
1939 . . . .	16.1	11.5	14,000,000
1940 . . . .	16.2	11 9	12,000,000

National Dairy Products Corporation, however, experienced no substantial change in "Net income/net worth" nor in "Net income/total assets."

	<i>Net Income/Net Worth</i>	<i>Net Income/Total Assets</i>
1942 . . . . .	11 9%	6 1%
1943 . . . . .	12 8	6 3
1944 . . . . .	12 1	6.3

**Preferred stock.** The net income represents the income available for the payment of dividends. If the company has preferred stock as well as common stock outstanding, the former usually has a prior interest in the income. The strength of the interest of the preferred stock is measured in terms of (a) "Earned per share" and (b) "Times preferred stock dividend requirement earned."

*Earned per share.* The amount earned per share of preferred stock is determined by the ratio "Net income/number of shares of preferred stock outstanding." For example, Goodyear Tire & Rubber Company, with net income of \$15,204,270 and 610,854 shares of preferred stock outstanding, earned at the rate of \$24.89 a share of preferred stock (\$15,204,270/610,854). On the other hand, American Sugar Refining Company, with net income of \$5,389,581 and 450,000 shares of preferred stock outstanding, earned at the rate of \$12 a share (\$5,389,581/450,000).

*Times earned.* The amount earned per share, however, does not indicate the adequacy or inadequacy of earnings available for the preferred stock dividend unless related to the dividend requirement. If, in the case of a stock which earns at the rate of \$10 a share, the dividend requirement is \$5 a share, the earnings are more adequate than if the dividend requirement were \$7 a share. For this reason a better measurement of the adequacy of earnings is the "Times preferred stock dividend requirement earned." The annual preferred stock dividend requirement is \$5 a share for Goodyear Tire & Rubber Company and \$7 a share for American Sugar Refining Com-

pany. The dividend requirement was earned 5.0 times on the former's preferred stock and 1.7 times on the latter's.

In view of the fact, however, that the fixed charges are a prior claim against the earnings and are continuous, the "Times preferred stock dividend requirement earned" is usually computed on an over-all basis. Assume that a company with fixed charges of \$1,000,000 and 100,000 shares of \$5 preferred stock outstanding has \$2,000,000 available for fixed charges in 1944. The balance available for the preferred stock dividend requirement after the payment of the fixed charges is \$1,000,000, or at the rate of \$10 a share. Since the preferred stock dividend requirement is \$5 a share, the dividend requirement of \$500,000 has been earned twice. Assume now that in 1945 the amount available for fixed charges declines to \$1,500,000. In this instance the balance available after the payment of the fixed charges for the preferred stock dividend requirement would equal the dividend requirement.

This calculation of the number of times the preferred stock dividend requirement has been earned ignores the fact that (a) the amount available for the preferred stock dividend is the balance after the payment of fixed charges and (b) since the fixed charges remain relatively constant, changes in the amount available for fixed charges affect the balance available for the preferred dividend. On an over-all basis, the preferred stock dividend requirement was earned 1.3 times in 1944 ( $\$2,000,000 / \$1,000,000 + \$500,000$ ) and once in 1945 ( $\$1,500,000 / \$1,000,000 + \$500,000$ ). The decline in the number of times the preferred stock dividend requirement was earned is not measured as from 2 to 1 but as from 1.3 to 1. In the instance of Goodyear Tire & Rubber Company, the net income of \$15,204,270 was the balance after the payment of fixed charges of \$3,102,799. On an over-all basis the preferred stock dividend requirement was earned 2.4 times ( $\$18,307,069 / \$3,102,799 + \$3,054,270$ ). In general, the preferred stock dividend requirement should be earned, on an over-all basis, at least  $2\frac{1}{2}$  times in an industrial company and  $1\frac{1}{2}$  times in a public utility.

**Common stock.** The balance of net income after provision for the preferred stock dividend requirement is available for distribution to the common stockholders. This balance and the amount actually paid the common stockholders is usually expressed in terms of a share of the common stock outstanding.

*Earned per share.* The amount "Earned per share" is calculated as "Net income — preferred stock dividend requirement/number of

shares of common stock outstanding." For example, Goodyear Tire & Rubber Company, with net income of \$15,204,270 and a preferred stock dividend requirement of \$3,054,270, earned at the rate of \$5.90 a share on 2,058,677 shares of common stock ( $\$15,204,270 - \$3,054,270 / 2,058,677$ ).

In calculating the amount "Earned per share," however, allowance is made for the required dividend on any stock issues with a priority right as to dividends regardless of (a) whether such dividends were paid on the preferred stock and (b) whether any accumulations of unpaid preferred stock dividends exist, and (c) regardless of the payment of dividends on the preferred stock which are in excess of the annual dividend requirement and thus represent the reduction of accumulations of dividends in arrears. Assume a company has outstanding 1,000,000 shares of \$5 cumulative preferred stock and 5,000,000 shares of common stock. If it has net income of \$5,000,000 and pays a \$4 dividend on the preferred stock, there is \$1 preferred stock dividend arrearage, and the rate of earnings on the common stock is not 20 cents a share but nil. There are no earnings available for the common stock until provision has been made for the full preferred stock dividend requirement. If, in the next year, the net income is \$10,000,000 and the company pays \$6 dividend on the preferred stock, representing \$1 arrearage and \$5 regular dividend, the earnings per share of the common stock are at the rate of \$1.00 per share ( $\$10,000,000 - \$5,000,000 / 5,000,000$ ).

The "Earned per share" calculation is shown as a "Deficit per share" of common stock if earnings are insufficient to cover the dividend requirement on the preferred stock or if there are no senior stocks and instead of a net income there is a net loss. If, in the above illustration, the net income for the next year is \$2,000,000, the earnings available for the common stock after provision for the preferred stock dividend requirement is a net loss of \$3,000,000. The rate of net loss is 60 cents per share on the common stock.

The significance of the calculation "earned per share" lies in its indication of the rate of earning power of the common stock. Chesapeake & Ohio Railway, with net income of \$27,340,995 in 1944 and 7,657,354 shares of common stock outstanding, earned at the rate of \$3.57 per share of common stock, compared to \$4.04 in 1943 and \$4.25 in 1942. Hartford Electric Light Company, with 837,510 shares of common stock and \$2,359,864 of net income ( $\$2,624,612 - \$264,748$ ), earned at the rate of \$2.81 a share in 1944,

compared to \$2.84 in 1943 and \$2.60 in 1942. National Dairy Products Corporation, with net income of \$13,238,288 in 1944 and 6,255,247 shares of common outstanding, earned at the rate of \$2.12 a share, compared to \$2.08 in 1943 and \$1.95 in 1942.

When comparing the earnings per share of a common stock over a period of years, it may be necessary in some instances to give recognition to changes in the number of shares outstanding. For example, International Business Machines Corporation reported earnings at the rate of \$8.40 a share in 1942, \$8.85 in 1943, and

	<i>Net Income</i>		<i>Dividend</i>		<i>Number of Shares Outstanding</i>
	<i>Total</i>	<i>Per Share</i>	<i>Cash</i>	<i>Stock</i>	
1942 . . . .	\$8,318,942	\$8 40	\$6	5%	990,116
1943 . . . .	9,204,885	8 85	6	5	1,039,546
1944 . . . .	9,711,356	8.90	6	5	1,091,443

\$8.90 in 1944. The company followed the policy of paying the annual dividend partly in cash at the rate of \$6 a share and partly in stock at the rate of 5 per cent a share. The payment of part of the dividend in stock resulted in an increase in the number of shares of stock outstanding from 990,116 in 1942 to 1,091,443 in 1944. The net income increased from \$8,318,942 in 1942 to \$9,711,356 in 1944, but to express the increased earning power in terms of a share as an increase from \$8.40 to \$8.90 a share is to ignore the increased number of shares outstanding. The \$8.40 reported in 1942 was based upon 990,116 shares outstanding, whereas the \$8.90 reported in 1944 was based upon 1,091,443 shares. In order to measure more accurately the increase in earning power on a common basis, it is necessary to adjust the reported earnings per share in 1942 and in 1943 to the same basis as the 1944 computation, namely, 1,091,443 shares outstanding. Assuming, therefore, that there had been 1,091,443 shares outstanding in 1942 and in 1943, the reported net income of \$8,318,942 in 1942 and of \$9,204,885 in 1943 would have been at the rate of \$7.62 and \$8.43, respectively. On this basis the earning power increased from \$7.62 a share in 1942 to \$8.90 in 1944.

*Dividend.* The amount of dividend paid on the common stock is discretionary with the management, since no definite rate is provided for in the certificate of incorporation. In some instances, however, the cash dividend that may be paid on the common stock may be restricted by the terms of the indenture under which outstanding bonds have been issued. For example, the indenture under which the funded debt of National Dairy Products Corpora-



tion is outstanding provides in substance that cash dividends may be paid on the common stock only if after the payment of the dividend (a) the balance of consolidated earned surplus exceeds \$35,000,000 and (b) consolidated tangible assets, after deducting consolidated liabilities other than consolidated funded indebtedness, shall be equal to at least  $1\frac{3}{4}$  times the consolidated funded debt. That the company met those requirements is evidenced by the following:

	<i>Earned Surplus after Dividend</i>	<i>Net Tangible Assets/ Funded Debt</i>
1942 . . . .	\$63,594,449	2.5 times
1943 . . . .	50,558,498	2 7
1944 . . . .	57,196,015	3.1

The dividend paid is usually expressed in terms of a share of stock and may be calculated as "Total dividend paid/number of shares outstanding." Chesapeake & Ohio Railway paid a total dividend of \$26,800,739 on 7,657,354 shares of common stock in 1944, or at the rate of \$3.50 a share, compared to \$3.50 in 1943 and \$3.50 in 1942. Hartford Electric Light Company in 1944 distributed \$2,303,320 as dividend on 837,510 shares, or at the rate of \$2.75 a share, compared to \$2.75 in 1943 and \$2.75 in 1942. National Dairy Products Corporation with 6,255,247 shares outstanding in 1944 paid a dividend of \$6,880,771, or at the rate of \$1.10, compared to \$1.00 in 1943 and \$0.80 in 1942.

*Dividend/earned.* The policy of the management with respect to the distribution of earnings may be gauged by an analysis of the relation between the dividend paid per share and the amount earned per share, or "Dividend per share/earned per share." For example, Chesapeake & Ohio Railway in 1944 earned at the rate of \$3.57 a share and paid a dividend of \$3.50. It distributed 98.0 per cent of earnings in 1944, compared to 86.6 per cent in 1943 and 82.3 per cent in 1942. Hartford Electric Light Company distributed \$2.75 out of earnings of \$2.81 a share in 1944, or 97.8 per cent of earnings, compared to 96.8 per cent in 1943 and 105.7 per cent in 1942. National Dairy Products Corporation in 1944 earned at the rate of \$2.12 a share and distributed \$1.10, or 51.9 per cent of earnings, compared to 48.0 per cent in 1943 and 41.0 per cent in 1942.

*Price/earned.* The rate at which the securities market capitalizes the earnings of a company is indicated by the "Price/earnings" ratio, which is calculated as "Average market price per share of common stock/earned per share of common stock." A stock which

has earned at the rate of \$4 a share for the year and has sold at an average price of \$80 a share during the year has sold at an average price of twenty times earnings. This indicates that the market has capitalized the earnings at the rate of 5 per cent. Chesapeake & Ohio Railway common stock earned at the rate of \$3.57 in 1944 and sold at an average price of \$47 for the year. On this basis the stock sold at an average of 13.1 times earnings, or at a rate of capitalization of 7.6 per cent. The rate of capitalization was 9.7 per cent in 1943 and of 13.3 per cent in 1942. Hartford Electric Light Company, earning at the rate of \$2.81 a share and selling at an average price of \$52 in 1944, sold at 18.5 times earnings, or at a rate of capitalization of 5.4 per cent. The rate of capitalization was 6.3 per cent in 1943 and 5.8 per cent in 1942. National Dairy Products Corporation, selling at an average price of \$23 in 1944 and earning at the rate of \$2.12, represented an average price of 10.9 times earnings, or a rate of capitalization of 9.1 per cent. The market capitalized the earnings of the company at the rate of 10.9 per cent in 1943 and at 14.0 per cent in 1942.

The rate at which the market capitalizes the earnings of a company depends upon three factors: (a) the risk involved in the security, (b) the outlook for future earnings, and (c) the trend of interest rates. Obviously, the higher the degree of risk involved in the security, the higher is the rate of capitalization; conversely, the lower the degree of risk, the lower is the rate of capitalization. By the same token, common stocks of companies with only slight possibilities of increasing profits tend to sell at high rates of capitalization, while those with good prospects of increasing the earnings tend to sell at low rates. In like manner, the rate of capitalization is usually low in periods when a low rate of return prevails and high in periods characterized by a high rate of return.

### Review Questions

1. Name three considerations involved in the analysis of the income statement.
2. Indicate the objective in the analysis of operating revenue or net sales.
3. Discuss the factors involved in the analysis of the sources of operating revenue in a railroad and a public utility company and of net sales in an industrial company.
4. Explain the calculation and significance of railroad "traffic density."
5. Indicate the significance of railroad "revenue per ton-mile."
6. Name and explain the classes of demand for electric current.
7. Explain the calculation and significance of operating ratio and the limitations to the ratio.

8. Discuss the relation of railroad transportation ratio and maintenance ratio to the operating ratio.
9. Name the sources of non-operating income to a company.
10. Discuss the purpose of analyzing non-operating income.
11. Distinguish between recurring and non-recurring non-operating income.
12. Explain the calculation and significance of the ratio "Times fixed charges earned."
13. Indicate the relation between fixed charges and operating revenue or net sales.
14. Explain the significance of the ratio "Net income/net worth" in the analysis of an industrial company.
15. Discuss the relation between the ratio "Net income/net worth" and the ratio "Net income/total assets" in the analysis of an industrial company.
16. Explain the calculation of the amount earned per share of preferred stock.
17. Explain the calculation and significance of "Times preferred stock dividend requirement earned" on an over-all basis.
18. Indicate the method of determining the amount earned per share of common stock.
19. Explain the calculation of the dividend paid per share of common stock.
20. Explain the significance of the relation of the amount of dividend paid to the amount earned per share of common stock.
21. Discuss the significance of the "Price/earnings" ratio.
22. Indicate the factors underlying the rate at which the market capitalizes the earnings on a common stock.

### Assignment

- (a) Compare the operating ratio, transportation ratio, and maintenance ratio of a railroad from the following data.

	<i>This Year</i>	<i>Last Year</i>
Operating Revenue . . . . .	\$979,773,000	\$875,354,000
Operating Expenses.		
Maintenance — Way & Structure . . . . .	108,488,000	92,830,000
Maintenance — Equipment . . . . .	163,611,000	152,518,000
Traffic . . . . .	11,493,000	10,544,000
Transportation . . . . .	348,985,000	302,181,000
Misc. & General . . . . .	30,934,000	24,417,000
Net Operating Revenue . . . . .	316,262,000	292,864,000
Taxes . . . . .	180,405,000	129,147,000
Railway Operating Income . . . . .	135,857,000	163,717,000
Hire of Equipment & Joint Rents — Dr. . . . .	8,311,000	16,798,000
Net Railway Operating Income . . . . .	\$127,546,000	\$146,919,000

- (b) Analyze the operating ratio from the following data of a public utility company:

	<i>This Year</i>	<i>Last Year</i>
Operating Revenue . . . . .	\$180,858,000	\$172,439,000
Operating Expenses . . . . .	72,864,000	66,789,000
Maintenance Expenses . . . . .	9,353,000	8,685,000
Depreciation Expenses . . . . .	22,906,000	20,778,000
Taxes . . . . .	40,927,000	42,057,000

- (c) Compute the number of times fixed charges were earned before and after taxes from the following data:

Net Sales . . . . .	\$760,491,000
Available for Fixed Charges . . . . .	105,881,000
Fixed Charges . . . . .	8,406,000
Provision for Federal Taxes . . . . .	81,996,000

- (d) On the basis of the following data, compute the number of times interest charges were earned on each bond, the 4's of 1960 being senior to the 3's of 1965:

Available for Fixed Charges . . . . .	\$21,872,235
Interest Charges:	
4's, 1960 . . . . .	7,290,745
3's, 1965 . . . . .	5,468,059

- (e) Determine for each year: (1) amount earned per share of preferred and of common stock; (2) times preferred stock dividend requirement earned; (3) cash dividend paid per share on the preferred stock and on the common stock, from the following data:

	<i>This Year</i>	<i>Last Year</i>
Available for Fixed Charges . . . . .	\$9,731,046	\$15,162,918
Fixed Charges . . . . .	\$ 261,115	\$ 226,442
Net Income . . . . .	\$9,469,931	\$14,936,476
Preferred Stock:		
No. of Shares . . . . .	1,543,000	1,543,000
Par Value . . . . .	\$20	\$20
Dividend Rate . . . . .	7%	7%
Cash Dividend Paid . . . . .	\$2,160,200	\$5,786,250
Common Stock:		
No. of Shares . . . . .	3,004,362	3,004,362
Par Value . . . . .	None	None
Cash Dividend Paid . . . . .	\$4,055,889	\$2,002,908

- (f) A company reported that the dividend requirement on the senior debenture stock was earned 7.7 times and on the junior preferred stock 19.4 times. In view of the following facts was this statement true?

Net Income . . . . .	\$50,190,827
Debenture Stock:	
No. of Shares . . . . .	1,092,948
Par Value . . . . .	\$100
Dividend Rate . . . . .	6%
Preferred Stock:	
No. of Shares . . . . .	500,000
Par Value . . . . .	None
Dividend Rate . . . . .	\$4.50

- (g) On the basis of the following data, compute the amount earned per share of preferred and common stock:

Net Income (deficit) . . . . .	\$424,077
Preferred Stock:	
No. of Shares . . . . .	47,864
Par Value . . . . .	\$100
Dividend Rate . . . . .	7%
Common Stock:	
No. of Shares . . . . .	10,044,956

- (h) Adjust the following reported earnings per share to reflect the effects of stock dividends:

	<i>Net Income</i>		<i>No of Shares Outstanding</i>
	<i>Total</i>	<i>Per Share</i>	
Two years ago	\$9,092,692	\$10 63	855,408
Last year .	9,431,013	10.50	898,178
This year . .	9,844,633	10.44	943,028

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## CHAPTER TWENTY

### BANK STATEMENTS

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**Introduction.** Commercial banks are organized under federal or state charters and are known as national or state banks, respectively. National banks are subject to uniform supervision by national bank examiners; state banks are subject to varying methods of supervision by state authorities. Membership in the Federal Reserve System is mandatory for national banks but optional for state banks.

**Sources of earnings.** Commercial banks obtain their earnings from many sources: interest on loans; income from investments; commissions, fees, and charges for bank services; trust department activities; and miscellaneous sources. Prior to 1929 more than half of the total assets of commercial banks were normally in loans, while investments accounted for less than 25 per cent. In 1929 interest on loans provided approximately 65 per cent of total gross earnings and income from investments about 20 per cent. Since then, however, there has been a complete transition, resulting in loans representing only about 15 per cent of total assets and investments rising to more than 55 per cent. This change in the distribution of assets is reflected in the changes in the relative importance of those assets as a source of earnings. In recent years, interest on loans has represented approximately 35 per cent of gross earnings while income on investments has provided about 45 per cent.

#### THE CHASE NATIONAL BANK OF THE CITY OF NEW YORK

DECEMBER 30, 1944

##### *Resources*

Cash and Due from Banks . . . . .	\$ 900,689,411
U. S. Government Obligations, direct and fully guaranteed . . . . .	2,899,834,061
State and Municipal Securities . . . . .	108,605,889
Other Securities . . . . .	135,574,897
Loans, Discounts and Bankers' Acceptances . . . . .	1,041,046,484
Accrued Interest Receivable . . . . .	11,470,848

Mortgages . . . . .	\$ 6,566,440
Customers' Acceptance Liability . . . . .	6,656,247
Stock of Federal Reserve Bank . . . . .	7,050,000
Banking Houses . . . . .	34,941,797
Other Real Estate . . . . .	3,983,963
Other Assets . . . . .	3,583,919
	<u>\$5,160,003,956</u>

*Liabilities*

Capital Funds:		
Capital Stock . . . . .	\$111,000,000	
Surplus . . . . .	124,000,000	
Undivided Profits . . . . .	<u>49,800,386</u>	
		\$ 284,800,386
Dividends Payable February 1, 1945 . . . . .		5,180,000
Reserve for Contingencies . . . . .		11,338,137
Reserve for Taxes, Interest, etc. . . . .		11,240,828
Deposits . . . . .		4,835,219,258
Acceptances Outstanding . . . . .	\$11,563,912	
Less Amount in Portfolio . . . . .	<u>4,315,828</u>	
		7,248,084
Liability as Endorser on Acceptances and Foreign Bills . . . . .		124,333
Other Liabilities . . . . .		<u>4,852,930</u>
		<u>\$5,160,003,956</u>

**Liabilities.** The accounts appearing on the liability side of the balance sheet of a commercial bank are capital funds, deposits, letters of credit and acceptances, federal funds borrowed, foreign funds borrowed, liability as endorser on acceptances and foreign bills, and miscellaneous accounts.

**Capital funds.** Capital funds represent the investment of the stockholders and consist of capital stock, surplus, and undivided profits. For example, Chase National Bank reported:

	1944	1943	1942
Capital Stock . . . . .	\$111,000,000	\$100,270,000	\$100,270,000
Surplus . . . . .	124,000,000	134,730,000	100,270,000
Undivided Profits . . . . .	<u>49,800,386</u>	<u>37,878,137</u>	<u>45,049,413</u>
Total Capital Funds . . . . .	<u>\$284,800,386</u>	<u>\$272,878,137</u>	<u>\$245,589,413</u>

Capital stock is the permanent investment and represents the stated value of the outstanding stock. The capital stock of Chase National Bank consisted of 7,400,000 shares which had a par value of \$15 in 1944 and of \$13.55 in 1943. Surplus represents the paid-in surplus and earnings which have been allowed to remain in the bank on a relatively permanent basis as an additional factor of safety to depositors. Undivided profits represents the surplus earnings available for the payment of dividends and for the absorption of unusual losses.

Surplus and undivided profits are closely related. Profits first appear in the undivided profits account, which is regarded by the

stockholders as distributable as dividends. The management, however, may wish to reduce the amount available for dividends and to increase the surplus, which is regarded as permanent capital. This is accomplished by a transfer from undivided profits to surplus. For example, in recent years Chase National Bank transferred \$34,460,000 from undivided profits to surplus, reducing undivided profits and increasing surplus to \$134,730,000. Bankers Trust Company (New York) transferred \$25,000,000 from undivided profits to the surplus account and transferred \$7,000,000 from general reserve to undivided profits. Fidelity-Philadelphia Trust Company authorized the transfer of \$2,000,000 from undivided profits to surplus account. National City Bank of New York added \$12,500,000 to surplus by transferring \$7,142,695 of net profits from the sale of securities, \$2,357,305 from realized recoveries, and \$3,000,000 from undivided profits. On the other hand, the management may transfer surplus to undivided profits in order to meet unusual losses. Investors in bank stocks are always interested in the year-end adjustments of surplus, undivided profits, reserves and, in some instances, capital. Such developments are important in that they reflect the progress a bank is making both from an earnings standpoint and from a recovery viewpoint.

*Deposits.* Deposits constitute the largest account on the liability side, averaging approximately 99 per cent of total liabilities (excluding capital funds) for all commercial banks in recent years. In the instance of Chase National Bank, for example, deposits of \$4,835,219,258 in 1944, of \$4,375,581,741 in 1943, and of \$4,291,466,886 in 1942 represented approximately 99 per cent of total liabilities in each year. Deposits consist of individual demand and time deposits, federal and municipal government deposits, and amounts due to banks and bankers. Demand deposits are payable on demand or after less than 30 days' notice. They are usually subject to check and do not bear interest. Demand deposits average about 75 per cent of total deposits.

Time deposits, on the other hand, are not subject to check, are of the "savings" type, and usually carry interest. The Board of Governors of the Federal Reserve System, under provisions of Regulation Q, has established a schedule of maximum rates of interest that may be paid on time deposits by member banks. Under federal law the rate payable by a national bank may not in any event exceed the maximum rate payable by state banks or trust companies on like deposits under the laws of the state in which



the national bank is located. The schedule established by the Federal Reserve System has also been adopted by the Federal Deposit Insurance Corporation for insured non-member banks.

Amounts due to banks and bankers represent balances of other banks maintained by them either for investment in the money market, for clearance and collection, as compensation for services rendered, or as depository for a portion of legal reserves. The Irving Trust Company in a recent year, for example, had 42,400 depositors with total deposits of \$1,141,041,213. Approximately 23 per cent of the total deposits were for the account of banks; 63 per cent were for corporations; and 14 per cent were for individual depositors.

*Letter of credit.* A letter of credit is an authorization permitting the creditor of the bank's customer to draw a draft on the bank under certain conditions. For example, a New York bank may issue a letter of credit to a customer covering the importation of goods from Brazil under which the Brazilian exporter is authorized to draw a 90-day draft on the New York bank. The letter of credit is issued by the New York bank with the understanding that the New York importer will provide the funds for payment before the draft matures. The Brazilian exporter, at the same time, is assured of the acceptance and final payment of his draft. The New York bank creates a "banker's acceptance" by accepting the draft. The acceptance of the draft by the New York bank results in the assumption by it of a liability for the customer, and the transaction is recorded as a liability on the bank's books. It is counterbalanced by an asset showing the equal liability of the customer to the bank.<sup>1</sup> Sometimes the accepting bank may purchase its own acceptances before maturity. For example, Chase National Bank in 1944 had purchased \$4,315,828 of its \$11,563,912 of acceptances.

	1944	1943
Acceptances Outstanding . . . . .	\$11,563,912	\$8,697,050
Less: Amount in Portfolio . . . . .	<u>4,315,828</u>	<u>2,808,451</u>
Net . . . . .	\$ 7,248,084	\$5,888,599

A letter of credit may be sold by the bank for cash and, as a result, the bank becomes liable for the amount involved. It is quite similar in effect to a certificate of deposit and is considered as an ordinary liability.<sup>2</sup>

<sup>1</sup> An excess of the liability item over the asset item indicates that customers have anticipated payment and have liquidated the liability.

<sup>2</sup> A person wishing to make a deposit to facilitate a remittance by mail but not wishing to open an account may purchase a certificate of deposit.

*Federal funds.* Federal funds purchased represent sight claims on the Reserve banks or the United States Treasury purchased by the member bank when its legal reserve with the Federal Reserve bank is deficient. For instance, Guaranty Trust Company reported Federal funds purchased as \$21,750,000 in 1944 and \$26,700,000 in 1943. The member bank with the deficient reserve exchanges its own cashier's check for a check drawn on the Federal Reserve bank by another member bank having excess reserve. The borrowing bank increases its reserve balance at the Federal Reserve bank by depositing the check of the lending bank. In practice, the borrowing of Federal funds may be effected by the lending bank instructing the Federal Reserve bank to debit its account for the amount of the loan and crediting the account of the borrowing bank.

*Endorsed acceptances.* When a bank sells acceptances with an endorsement, it creates a contingent liability which is recorded as a liability offsetting the sold acceptance, which appears as an asset. For instance, Chase National Bank reported "Liability as Endorser on Acceptances and Foreign Bills" as \$124,333 in 1944 and as \$561,412 in 1943. At the maturity of the acceptances or bills, however, both the contingent asset and the contingent liability disappear from the balance sheet.

*Miscellaneous liabilities.* The miscellaneous liabilities include dividends payable, items in transit, accounts payable, and reserves. Chase National Bank reported:

	1944	1943
Dividends Payable . . . . .	\$ 5,180,000	\$5,180,000
Other Liabilities . . . . .	4,852,930	7,565,170
Reserve for Contingencies . . . . .	11,338,137	6,455,399
Reserve for Taxes, Interest, etc. . . . .	11,240,828	5,863,505

Banks establish reserves for losses, for taxes, for interest, and for various contingencies. Reserve for losses is a genuine liability reflecting the best judgment of the management on specific assets. Though it may appear as a liability, usually it is deducted directly from the asset affected, which is shown net. Reserve for taxes and interest represents taxes and interest not yet due but accrued to date of the balance sheet. Reserve for contingencies seeks to relieve undivided profits of any special losses that may be incurred. This reserve usually is established out of non-recurring income, such as profits from the sale or redemption of bonds. For example, securities profits were carried to reserves by Bank of Manhattan Company and by Manufacturers Trust Company in 1943. The Guaranty Trust Company in 1943 had a "General Contingency

Reserve" of \$34,022,980. During 1944 it increased the reserve by \$2,849,823, of which \$1,000,000 was transferred from earnings and \$1,849,823 represented recoveries on bad debts and released reserves. The balance at the end of 1944 of \$33,520,903 reflected the transfer of \$3,351,900 to various allocated reserves.

**Assets.** The asset side of the balance sheet indicates the forms of employment in which the bank has placed its funds. The assets consist of cash, securities, loans, and discounts, real estate bonds and mortgages, real estate, and miscellaneous assets.

**Cash.** Cash includes cash on hand, cash in the Federal Reserve bank, and cash due from banks and bankers. Cash in the Federal Reserve bank refers to the aggregate of the reserve which the bank is required to maintain with the Federal Reserve bank of its district and any balance in excess of the reserve requirement. The minimum amount of reserve is determined by the classification of the bank as a central reserve city, reserve city, or country bank, and the character of deposits as net demand or as time deposits. Net demand deposits subject to the reserve requirement consist of demand deposits other than war loan deposits, less cash items in process of collection and demand balances due from domestic banks. The minimum amount of reserve is determined by the Federal Reserve Board and has been changed by the Board from time to time. Cash due from banks and bankers represents balances with other banks maintained to facilitate collection of notes and checks or the drawing of drafts, or for investment in call loans. Chase National Bank reported "cash and due from banks" of \$900,689,411 in 1944 and \$1,050,012,133 in 1943.

**Security investments.** Security investments include United States Government obligations, state and municipal bonds, bonds and notes of railroad and public utility companies, and stock in the Federal Reserve bank. United States Government obligations are shown at amortized cost and other investments at book or market, whichever is lower.<sup>3</sup> Chase National Bank, for example, reported:

	1944	1943
U. S. Government Obligations, direct and fully guaranteed . . . . .	\$2,899,834,061	\$2,603,171,662
State and Municipal Securities . . . . .	108,605,889	74,385,804
Other Securities . . . . .	135,574,897	89,737,516
Stock of Federal Reserve Bank . . . . .	7,050,000	7,050,000

The Chase National Bank's investment in United States Government obligations included both short and long-term securities.

<sup>3</sup> Convention values may be used for all except stocks and defaulted obligations.

The investment in state and municipal securities enabled the bank to diversify its investments. The item of "Other Securities" of \$135,574,897 consisted of the following:

Federal Home Loan Bank debentures . . . . .	\$ 4,648,410
Federal Intermediate Credit Bank debentures . . . . .	1,244,596
Municipal revenue bonds . . . . .	12,030,502
Railroad bonds (equipment trusts) . . . . .	50,323,369
Public utility bonds . . . . .	200,067
Industrial and miscellaneous bonds . . . . .	19,572,347
Foreign securities . . . . .	38,764,162
Stocks (for bank purposes) . . . . .	8,109,538
Stock (others) . . . . .	681,906

*Federal Reserve bank stock.* All banks entering the Federal Reserve System are required to subscribe to the capital stock of the Federal Reserve bank of the district. The required subscription is 6 per cent of the member bank's capital and surplus, of which one half is paid at once and the balance is subject to call by the directors of the Federal Reserve bank. The member bank is entitled to a cumulative dividend of 6 per cent on its paid subscription. The subscription to the stock must be increased or decreased with changes in capital and surplus. For example, Chase National Bank in 1942 had a paid-in subscription of \$6,016,200 based upon capital and surplus of \$200,-540,000. This subscription was increased to \$7,050,000 in 1944 as a result of the increase in capital and surplus of the bank to \$235,-000,000.

*Loans and discounts.* Loans and discounts refers to loans made to customers for a relatively short period, usually maturing in less than one year. These loans and discounts consist of single-name and two-name paper, collateral loans, and loans on real estate. Single-name paper is a promissory note signed by the borrower and is based on his personal credit. It may be unsecured or secured by collateral. Two-name paper represents notes or drafts received by the borrower from his customers and discounted by the bank. Such paper may be secured by evidence of title to merchandise, such as a warehouse receipt. Most of the collateral loans arise out of the financing of security transactions. Loans and discounts are shown after deduction of allocated reserves to cover estimated probable losses. Loans on real estate represent loans secured by liens on improved property made in accordance with the law limiting such loans. Chase National Bank, for instance, reported "Loans, Discounts and Bankers' Acceptances" of \$1,041,046,484 in 1944 and of \$791,979,925 in 1943. An important loan classification which has developed in the last decade is the term loan, which is repayable

in installments over a period of five years or less and, in some instances, ten years. Term loans have been made for such purposes as the purchase of equipment or other capital assets or for the retirement of bonds and preferred stocks.

Loans and discounts as a source of earnings are influenced in large part by the type of loan the bank makes. Among New York City banks, for example, Chemical National Bank is known to be particularly active in the South, where interest rates are usually relatively high. Public National Bank is very strong in the textile and garment trade. Manufacturers Trust Company, because of its many branches and its policy of starting to know its customers early, has a very large number of small and medium-size but high interest-bearing loans. First National Bank, on the other hand, with its single office and its contacts largely with great corporations, is primarily a wholesaler of money at low interest rates.

*Mortgage loans.* National banks are permitted to make mortgage loans not to exceed, in the aggregate, the total of unimpaired capital and surplus or 60 per cent of their time and savings deposits, whichever is greater. These mortgages usually arise from building construction loans and are of short duration. They consist of first mortgages fully insured as to principal and interest by the Federal Housing Administration or first mortgages not exceeding 60 per cent of the appraised value of the property. Banks also acquire real estate mortgages when given in good faith to protect debts previously contracted on an unsecured or otherwise secured basis. Chase National Bank, for example, reported mortgages of \$6,566,440 in 1944 and \$7,371,147 in 1943.

*Real estate.* Real estate holdings of a bank are restricted to bank buildings and real estate acquired in foreclosure of mortgages or loans. Chase National Bank reported:

	1944	1943
Banking Houses . . . . .	\$34,941,797	\$35,740,420
Other Real Estate . . . . .	3,983,963	4,990,628
	<u>\$38,925,760</u>	<u>\$40,731,058</u>

*Miscellaneous assets.* The miscellaneous assets reported by a bank include credits granted on acceptance and accrued interest and accounts receivable. A credit granted on acceptance arises when the bank accepts on behalf of a customer a time draft drawn on the bank. The customer's liability to reimburse the bank at maturity of the draft is the bank's asset. Accrued interest receivable represents interest accrued but not yet due on securities and loans in good standing. Chase National Bank reported:

	1944	1943
Customers' Acceptance Liability . . . . .	\$ 6,656,247	\$ 4,535,148
Accrued Interest Receivable . . . . .	11,470,848	9,114,029
Other Assets . . . . .	3,583,919	1,885,543
	<u>\$21,711,014</u>	<u>\$15,534,720</u>

**Analysis of deposits.** Analysis of the deposits is one criterion of a bank's success. Deposits may be classed as primary or secondary. A primary deposit refers to the deposit of cash, checks, or similar items by the depositor. A secondary deposit represents the proceeds of a loan or a discount which is credited to the borrower's deposit account. If a customer borrows \$1,500,000 for 90 days at 5 per cent and leaves the proceeds with the bank as a demand deposit, the asset account "Loans and Discounts" is increased by \$1,500,000. The liability account "Deposits" is also increased, but the extent of the increase depends upon whether the \$1,500,000 borrowed was in the form of a loan or a discount. If in the form of a loan, the borrower receives \$1,500,000 and at the end of 90 days will repay \$1,518,750 (\$1,500,000 principal and \$18,750 interest). At the time of the loan, demand deposits of the bank are increased by \$1,500,000. If, on the other hand, the transaction is in the form of a discount, the borrower receives \$1,481,250 (\$1,500,000 less \$18,750 discount) and at the end of 90 days will repay \$1,500,000. At the time of the discount, demand deposits of the bank are increased by \$1,481,250 and unearned discount by \$18,750.

Analysis of deposits involves consideration of the growth in deposits, the relation of deposits to capital funds, and the manner in which deposits have been employed.

*Growth in deposits.* The increase in the deposits of Chase National Bank is evidenced by the following:

	Deposits	Percentage Change
1938 . . . .	\$2,234,332,982	+ 7.9
1939 . . . .	2,803,730,326	+ 25.4
1940 . . . .	3,543,337,564	+ 26.4
1941 . . . .	3,534,966,617	- 0.2
1942 . . . .	4,291,466,886	+ 21.4
1943 . . . .	4,375,581,741	+ 1.9
1944 . . . .	4,835,219,258	+ 10.5

The general increase in deposits of the commercial banks of the country in recent years was a reflection of the abnormally high level of industrial production and employment arising out of governmental wartime expenditures. The increase in deposits was unevenly distributed, tending to expand most in areas where war activities were greatest. The large amount of funds raised in New

York City through subscriptions to the War Loans was temporarily deposited in New York City banks and then withdrawn by the federal government as it was required to make payments for goods and services throughout the country.

*Deposits/capital funds.* The relation of deposits to capital funds is important to the depositor as a margin of safety and to the stockholder as a source of dividends. Many states have sought to protect the position of the depositor by limiting the deposits that a bank may accept to a definite ratio to capital funds. The generally accepted standard has been a maximum of ten times capital funds. The reasoning underlying such limitation is that inasmuch as deposits are almost entirely invested in loans and securities, a loss of over 10 per cent in those earnings assets, when deposits are ten times capital funds, would wipe out the margin of protection to the depositors. Assume the following:

Loans & Discounts . . .	\$400,000,000	Capital Funds . . . . .	\$ 50,000,000
Investments . . . . .	100,000,000	Deposits . . . . .	500,000,000
Other Assets . . . . .	60,000,000	Other Liabilities . . . . .	10,000,000
	<u>\$560,000,000</u>		<u>\$560,000,000</u>

In this instance, deposits are ten times capital funds and aggregate loans and discounts and investments equal deposits. If the loans and discounts and investments declined 10 per cent (\$50,000,000), the margin of safety represented by the stockholders' equity (capital funds) would be completely eliminated:

Loans & Discounts . . . . .	\$360,000,000	Capital Funds . . . . .	nil
Investments . . . . .	90,000,000	Deposits . . . . .	\$500,000,000
Other Assets . . . . .	60,000,000	Other Liabilities . . . . .	10,000,000
	<u>\$510,000,000</u>		<u>\$510,000,000</u>

The relation of deposits to capital funds is important also to the stockholder. Deposits represent the loanable funds available for loans and discounts and for investments upon which the bank earns income. If deposits are much less than ten times capital funds, the ability of the bank to report satisfactory earnings may be reduced. The relation of deposits to capital funds in a bank balance sheet is comparable to the "Total debt/net worth" ratio used in industrial balance sheet analysis. In the analysis of a bank balance sheet, however, deposits are used to the exclusion of other liabilities as representing total debt because of the overwhelming importance of deposits.

During the period 1923-1929 bank capital expanded rapidly as a result, in large part, of the accumulation of undistributed earnings

and the sale of new stock issues. Practically all of this growth was eliminated by the heavy losses during the depression of the 1930's. In fact, many banks found it necessary to strengthen their capital structures by the sale of stock to the Reconstruction Finance Corporation. Thereafter there was a steady growth in bank capital funds. Most of this growth after 1934 was caused by the retention of undistributed profits rather than by the sale of stock. In general the sale of stock was restricted by the losses incurred by the banks and by the small dividends distributed.

In spite of the accelerated rise in capital funds, the ratio of deposits to capital funds also rose. The growth in deposits was considerably more rapid than the growth in capital funds. The ratio of deposits to capital funds for banks in general rose from 8.9 times at the end of 1939 to 15.8 times in 1944. The rise in deposits in recent years resulted in many large banks having less than ten cents of capital funds protecting a dollar of deposits. Chase National Bank, for example, reported deposits of \$4,835,219,258 and capital funds of \$284,800,386 in 1944, a ratio of deposits 16.9 times capital funds. This compared with a ratio of 16.0 times in 1943 and 17.4 times in 1942. The ratio of 17.4 in 1942 led the bank to transfer \$34,460,000 from undivided profits to surplus during 1943 and to increase the capital stock in 1944 (a) by increasing the par value of the stock from \$13.55 to \$15 a share and (b) by transferring \$10,730,000 from surplus to capital stock. Though this adjustment did not increase the total capital funds, it did increase the permanent capital at the expense of the undivided profits. The \$34,460,000 transferred from undivided profits to surplus in 1943 reduced the undivided profits available for dividends and at the same time increased the more permanent capital funds in the form of surplus. The transfer of \$10,730,000 from surplus to capital stock in 1944 made those funds still more permanent:

	1942	1943	1944
Capital . . . . .	\$100,270,000	\$100,270,000	\$111,000,000
Surplus . . . . .	100,270,000	134,730,000	124,000,000
Undivided Profits . . . . .	45,050,000	37,878,000	49,800,000
	<u>\$245,590,000</u>	<u>\$272,878,000</u>	<u>\$284,800,000</u>

The Bankers Trust Company with deposits of \$1,594,694,072 and capital funds of \$125,366,747 in 1943 had a ratio of 12.7 times. To adjust capital funds to the rise in deposits to \$1,726,073,557 in 1944, the bank increased the capital stock from \$25,000,000 to \$30,000,000 by transferring \$5,000,000 from the general reserve



to the capital account and declaring a stock dividend of \$5,000,000. At the same time it transferred \$5,000,000 from undivided profits to surplus. As a result, the total capital funds amounted to \$137,-344,871, compared to \$125,366,747 in 1943. The ratio of deposits to capital funds was held to 12.5 times.

	1943	1944
Capital . . . . .	\$ 25,000,000	\$ 30,000,000
Surplus . . . . .	75,000,000	80,000,000
Undivided Profits . . . . .	25,366,747	27,344,871
	<u>\$125,366,747</u>	<u>\$137,344,871</u>

The Guaranty Trust Company, on the other hand, in 1943 reported deposits of \$2,903,794,036 and capital funds of \$291,391,854, or 9.9 times, compared to 9.6 times in 1942. The rise in deposits to \$3,441,036,641 in 1944 increased the ratio to 11.3 times. The Guaranty Trust Company, the Irving Trust Company, and the First National Bank of New York have been notable for their strong capital funds position.

## DEPOSITS/CAPITAL FUNDS

	<i>Guaranty</i>	<i>Irving</i>	<i>First National</i>
1940 . . . . .	8.7	7.5	7.8
1941 . . . . .	8.1	7.6	7.2
1942 . . . . .	9.6	8.8	7.2
1943 . . . . .	9.9	9.1	7.5
1944 . . . . .	11.3	10.5	7.6

*Earning assets/deposits.* Inasmuch as the deposits are employed primarily in earning assets (loans and discounts and investments), analysis of the distribution of the deposits among the earning assets is important. Normally banks employ deposits chiefly in loans and discounts, since that form of employment is usually the more profitable. In recent years, however, this normal distribution has been reversed because of the peculiar conditions with which the banks have been faced. Chase National Bank in 1944 reported loans and discounts of \$1,041,046,484, or 21.5 per cent of deposits, compared to investments of \$3,144,014,847, or 65 per cent. The 1944 report simply accentuated a trend in effect for the bank in recent years as evidenced by the following percentages to deposits:

	<i>Loans &amp; Discounts</i>	<i>Investments</i>
1940 . . . . .	18.7%	39.6%
1941 . . . . .	22.7	47.6
1942 . . . . .	18.3	60.1
1943 . . . . .	18.1	63.2
1944 . . . . .	21.5	65.0

The investor also is interested in the character of the bank's security investments especially from the standpoint of maturity. Investments of near-maturity provide a high degree of liquidity but a relatively low return, whereas long-term investments are usually less liquid but more productive of income. The Chase National Bank's investment in United States government obligations, direct and guaranteed, in 1944 was largely short-term. The average maturity on the basis of the nearest call dates was two years and two months in 1944, compared to one year and ten months in 1943; and to final maturity, two years and ten months, compared to three years in 1943. Approximately 40 per cent of those securities in 1944 and 61 per cent in 1943 would mature or be callable within one year. The average maturity of the portfolio of the National City Bank of New York was four years and three months in 1944, compared to four years in 1943.

Another factor of importance to the investor is the relation of cash to deposits. Chase National Bank in 1944 reported cash of \$900,689,411, or 18.6 per cent of deposits, compared to 23.9 per cent in 1943 and 26.4 per cent in 1942. The decreased percentage of cash to deposits was reflected primarily in the increased percentage of investments to deposits.

**Book value.** The book value of a share of common stock is more significant in bank stock analysis than in other fields primarily because of the high proportion of liquid assets represented in the balance sheet. The book value per share is calculated by dividing the capital funds or stockholders' equity by the number of shares of common stock outstanding. For example, Chase National Bank in 1944 reported capital funds of \$284,800,386, or \$38.49 per share of stock, for the 7,400,000 shares outstanding. This compared with \$36.88 in 1943 and \$33.19 in 1942. Guaranty Trust Company, on the other hand, reported \$302,222,571 capital funds which, on the basis of 900,000 shares, represented \$335.80 book value per share, compared to \$323.77 in 1943 and \$313.94 in 1942.

**Earned per share.** All banks are required to submit to the supervising authorities detailed balance sheets and income statements, but the report to the stockholders has not always been so complete. The report to the stockholders always contains the balance sheet, but it is not always supplemented by income and expense items. In recent years, however, many banks have adopted the policy of including an income statement. Though the earnings may be determined from analysis of the balance sheet, in instances where

income statement figures are also given, they should be used as a check against the balance sheet calculation.

*Calculation.* The earnings of a bank may be judged from a balance sheet if consideration is given to changes in capital, surplus, and undivided profits in successive balance sheets. The earnings of Chase National Bank may be estimated from the following balance sheet items:

	1944	1943	Change
Capital Stock . . . . .	\$111,000,000	\$100,270,000	+ \$10,730,000
Surplus . . . . .	124,000,000	134,730,000	- 10,730,000
Undivided Profits . . . . .	49,800,886	37,878,137	+ 11,922,249
			+ 11,922,249
Dividends Paid 1944 . . . . .			10,360,000
Total Earnings . . . . .			\$22,282,249

The earnings as determined from the balance sheet may be checked against the income statement. The bank reported the following income statement:

	1944	1943
Current Operating Earnings:		
Interest on Loans . . . . .	\$15,972,000	\$15,653,000
Interest and Dividends on Securities . . . . .	31,168,000	26,067,000
Fiduciary Fees, Commissions, etc. . . . .	8,060,000	7,226,000
Total . . . . .	\$55,200,000	\$48,946,000
Current Operating Expenses:		
Salaries . . . . .	\$15,587,000	\$14,476,000
Provision for Taxes and Assessments . . . . .	10,612,000	7,826,000
Other Current Operating Expenses . . . . .	10,225,000	9,398,000
Total . . . . .	\$36,424,000	\$31,700,000
Net Current Operating Earnings . . . . .	\$18,776,000	\$17,246,000
Net Profit on Securities . . . . .	3,506,000	7,402,000
Net Earnings . . . . .	\$22,282,000	\$24,648,000

The change in surplus and undivided profits are as follows:

Balance beginning of year . . . . .	\$172,608,000	\$145,320,000
Net Earnings for the year . . . . .	22,282,000	24,648,000
Total . . . . .	\$194,890,000	\$169,968,000
Credit: transfer from reserve for contingencies . . . . .		13,000,000
	\$194,890,000	\$182,968,000
Debit:		
Dividends declared . . . . .	\$ 10,360,000	\$ 10,360,000
Transfer from Surplus to Capital . . . . .	10,730,000	
	\$ 21,090,000	\$ 10,360,000
Balance end of year . . . . .	\$173,800,000	\$172,608,000

Inasmuch as the earnings are computed, however, in terms of a share of stock, the earnings as calculated from the balance sheet (\$22,282,249) and as reported by the income statement (\$22,282,000) were at the rate of \$3.01 a share (\$22,282,249/7,400,000). This compared with \$3.33 in 1943 and \$2.03 in 1942.

*Sources of earnings.* Analysis of the sources of earnings in terms of a share revealed that of the \$3.01 earned in 1944, \$2.54 was from net current operating earnings (\$18,776,000/7,400,000) and \$0.47 was from net profit on securities (\$3,506,000/7,400,000), compared to \$2.33 and \$1.00, respectively, in 1943.

The advantage of determining the sources of earnings from the income statement as a check against the earnings as determined from the balance sheet was shown in the 1943 report of Chase National Bank. Calculation of the earnings in 1943 from the balance sheets revealed earnings of \$37,648,724 at the rate of \$5.09 a share.

	1942	1943	Change
Capital Stock . . . . .	\$100,270,000	\$100,270,000	
Surplus . . . . .	100,270,000	134,730,000	+ \$34,460,000
Undivided Profits . . . . .	45,049,413	37,878,137	- 7,171,276
			+ \$27,288,724
Dividends paid 1943 . . . . .			10,360,000
Total Earnings . . . . .			\$37,648,724

Reference to the income statement, however, revealed that current operating earnings of \$17,246,000 yielded \$2.33 a share and net profit on securities of \$7,402,000 provided \$1.00 a share. The balance of \$1.76 a share represented a transfer of \$13,000,000 from the reserve for contingencies to surplus and undivided profits. The actual amount earned per share was \$3.33 rather than \$5.09. The comparison of earnings in 1944 and 1943 was \$3.01 and \$3.33, respectively, derived as follows:

	1944	1943
Current Operating Earnings . . . . .	\$2.54	\$2.33
Net Profit on Securities . . . . .	0.47	1.00
Total Net Earnings . . . . .	\$3.01	\$3.33

Analysis of the current operating earnings of Chase National Bank in 1944 indicated that interest and dividends on securities provided 56.5 per cent of the total in 1944, compared to 53.4 per cent in 1943. The rise in importance of security investments as a source of income for banks in general was indicated by the fact that such income provided 43.9 per cent of total current operating earnings for all commercial banks insured by the Federal Deposit Insurance Corporation in 1943, compared to 29.4 per cent in 1941. The increase of \$5,101,000 or 19.5 per cent in interest and dividends on securities in the instance of Chase National Bank was due to two factors: (a) the increase in investments from \$2,767,294,982 to \$3,144,014,847 and (b) the increase in the average rate of interest earned

on United States Government obligations from 0.86 per cent to 1.06 per cent.

It should be noted that banks differ in the composition of their earnings. Chemical Bank & Trust Company in 1944 had about one third as much invested in "Other Securities" as in government bonds, whereas Central Hanover Bank & Trust Company had only one twentieth as much invested in "Other Securities" as in government bonds. Some banks also appear to secure a considerably higher rate of return on their investments than others. The difference lies fundamentally in the policy of the particular bank in selecting maturities. For example, 60 per cent of Chase National Bank's investments in 1944 matured in less than one year and yielded approximately 0.88 per cent, whereas Corn Exchange Bank & Trust Company had almost 70 per cent of its funds in issues maturing between five and ten years and yielding up to  $2\frac{1}{2}$  per cent on the longer maturities. Under the circumstances it would have been easier for Chase National Bank to increase its income through the purchase of longer-term maturities than it would have been for Corn Exchange Bank & Trust Company.

In the instance of Chase National Bank, interest on loans provided 29.0 per cent of the total current operating earnings in 1944, compared to 32.1 per cent in 1943. Loans, discounts, and bankers' acceptances rose from \$791,979,925 in 1943 to \$1,041,046,484 in 1944. The over-all rate of return on combined investments and loans increased, however, from an average of 1.18 per cent in 1943 to 1.26 per cent in 1944. The decrease in the importance of loans and discounts as a source of earnings was evidenced by the fact that such income declined from 49.0 per cent of total current operating earnings for all commercial banks insured by the Federal Deposit Insurance Corporation in 1941 to 36.0 per cent in 1943.

*Net current operating earnings.* A good measure of a bank's earning performance is its net current operating earnings. This figure represents net income (a) exclusive of all recoveries on assets previously charged off and all security profits and (b) before transfers to reserves. The earning power of a bank may be measured by two ratios: "Net current operating earnings/deposits and capital funds" and "Net current operating earnings/capital funds." Since the deposits and capital funds indicate the total working funds, the former ratio reflects the earning ability of the bank. The net current operating earnings of Chase National Bank, for example, represented 0.36 per cent return on deposits and capital funds in 1944 (\$18,776,-

000/\$5,120,019,644), compared to 0.37 per cent in 1943. The latter ratio, on the other hand, indicates the return on the stockholders' investment. The net current operating earnings of Chase National Bank represented 6.6 per cent return on capital funds in 1944 (\$18,-776,000/\$284,800,386) as against 6.3 per cent in 1943.

**Market value.** The market value of a share of bank stock should be related to the book value, the earnings, and the dividend. The market value should not exceed  $1\frac{1}{4}$  times the book value. The market value of Chase National Bank stock has approximated

#### CHASE NATIONAL BANK STOCK

	<i>Market Value</i>	<i>Book Value</i>	<i>Market/ Book</i>	<i>Earned</i>	<i>Market/ Earned</i>	<i>Dividend</i>	<i>Yield</i>
1940 . .	\$31	\$31.99	0.9	\$1.83	17	\$1.40	4.5
1941 . .	29	32.55	0.9	1.96	15	1.40	4.8
1942 . .	24	33.19	0.7	2.03	12	1.40	5.8
1943 . .	33	36.88	0.9	3.33	10	1.40	4.2
1944 . .	41	38.49	1.0	3.01	13	1.40	3.4

the book value. The market value should not exceed 15 times earnings. The price-earnings ratio has not exceeded this standard since 1940. The dividend should provide a yield of at least 4 per cent. The stock met this requirement each year except 1944, when it yielded less than 4 per cent.

#### Review Questions

1. Name the two classes of commercial banks.
2. Discuss the sources of bank earnings.
3. Indicate the content and significance of capital funds.
4. Distinguish between paid-in surplus, earned surplus, and undivided profits.
5. Discuss the relationship between surplus and undivided profits.
6. Distinguish between demand and time deposits.
7. Explain why one bank maintains a deposit with another bank.
8. Indicate the asset and the liability created by a letter of credit and an acceptance.
9. What is meant by federal funds?
10. Indicate the asset and liability arising out of a bank's endorsement on acceptances and foreign bills.
11. Discuss bank policy with respect to reserves.
12. Explain the significance of the asset side of a bank balance sheet.
13. Name three classes into which the cash of a bank may be divided.
14. Describe the nature of a bank's security investments.
15. Discuss the significance of a bank's loans and discounts.
16. What is meant by a "term" loan?
17. Name the consideration involved in the analysis of deposits.

18. Discuss the significance of an analysis of the growth of deposits.
19. Discuss the significance to the depositor and to the stockholder of the ratio of deposits to capital funds.
20. Indicate the significance of an analysis of the distribution of the deposits among the earning assets
21. Discuss the significance of the relation of cash to deposits.
22. Indicate the relation of book value to market value per share.
23. Explain the calculation of earnings per share from the balance sheet and the income statement.
24. Discuss the significance of an analysis of the sources of earnings.
25. Explain the significance of the ratios. "Net current operating earnings/deposits and capital funds" and "Net current operating earnings/capital funds."
26. Discuss the significance of the relation of market price to earnings.
27. Comment on the yield on bank stocks.

### Assignment

- (a) Compute the required subscription of a member bank to the stock of the Federal Reserve bank on the basis of the following data:

Deposits . . . . .	\$4,205,072,012
Capital . . . . .	77,500,000
Surplus . . . . .	122,500,000
Undivided Profits . . . . .	28,610,465

- (b) Compute the book value per share on the basis of the following data:

Capital Stock . . . . .	\$30,000,000	Surplus . . . . .	\$ 80,000,000
Undivided Profits . . . . .	\$28,344,871	Deposits . . . . .	\$1,726,073,557
Par Value of Stock . . . . .	\$100		

- (c) On the basis of the following data, compute the growth in deposits, the ratio of deposits to capital funds, the amount earned per share this year and last year, the ratio of net current operating earnings to deposits and capital funds, the ratio of net current operating earnings to capital funds, the price-earnings ratio, and the dividend yield:

	<i>This Year</i>	<i>Last Year</i>	<i>Previous Year</i>
Deposits . . . . .	\$964,148,000	\$928,494,000	\$795,277,000
Capital Stock . . . . .	50,000,000	50,000,000	50,000,000
Surplus & Undivided Profits . . . . .	56,429,000	54,907,000	54,194,000
Dividends Paid . . . . .	3,000,000	3,000,000	3,000,000
Par Value of Stock . . . . .	\$10	\$10	\$10
Net Current Operating Earnings . . . . .	5,022,000	4,213,000	3,501,000
Market Price of Stock . . . . .	\$13	\$10	\$10½

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## CHAPTER TWENTY-ONE

# FIRE INSURANCE COMPANY STATEMENTS

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**Introduction.** The operations of a fire insurance company include the underwriting of insurance risks and the investment of reserve funds. Fire insurance in force in the United States in 1944 was estimated at \$90,000,000,000. The public need for protection in fire insurance and allied lines has brought about the formation of groups or "fleets" of fire and casualty companies. Fire insurance companies have established casualty insurance subsidiaries and many casualty companies have organized fire insurance subsidiaries to carry fire, inland marine, and other fire lines. Two thirds of the groups include casualty companies, and in some of those mixed groups the casualty companies are larger than the fire companies.

**Types of insurance.** Fire insurance companies underwrite a wide diversity of risks such as fire, motor vehicle, inland navigation and transportation, ocean marine, extended coverage, tornado, windstorm, cyclone, hail, sprinkler leakage, riot, civil commotion, explosion, earthquake, and aircraft. Fire insurance risks represent more than 50 per cent of the total risks underwritten. The net premiums written by Hartford Fire Insurance Company, for example, include fire, extended coverage, ocean marine, motor vehicles, earthquakes, riot, aircraft, rail, and flood. The net premiums written have been as follows:

	1944	1943	1942
Fire . . . . .	\$29,259,377	\$28,186,063	\$25,720,531
Extended Coverage . . . . .	3,800,705	3,169,736	2,756,617
Ocean Marine:			
Excluding war risks . . . . .	3,303,457	2,124,173	2,054,255
War risks only . . . . .	1,342,150	2,197,526	6,944,149
Motor Vehicles . . . . .	5,860,269	5,535,870	5,971,590
Earthquakes . . . . .	57,735	37,096	45,163
Inland Navigation . . . . .	6,209,261	5,133,508	4,117,923
Tornado . . . . .	1,650,652	1,603,364	1,708,430
Hail . . . . .	2,227,798	1,994,128	1,851,526
Sprinkler Leakage . . . . .	130,409	119,144	119,458
Riot, Civil Commotion . . . . .	280,041	391,887	523,281
Aircraft . . . . .	106,407	156,470	163,384
Rain and Flood . . . . .	251,204	147,118	78,275
	<u>\$54,479,465</u>	<u>\$50,796,083</u>	<u>\$52,054,583</u>



Fire losses reported by fire insurance companies during 1944 amounted to \$423,538,000 in the entire country, which was the highest amount since 1932 when the losses aggregated \$442,143,000. The highest annual loss in history was \$561,980,751 in 1926. Losses for the period 1940-1944 revealed an increase of 20 per cent over the period 1935-1939.

**Underwriting.** The profitable operation of underwriting depends upon the receipt of sufficient premium income to exceed the payment of commissions to agents, administrative expenses, and losses to policyholders. Experience data are compiled annually by the National Board of Fire Underwriters for stock companies and by the Federation of Mutual Fire Insurance Companies for mutual companies. In New York State the New York Fire Insurance Rating Organization uses all this experience in arriving at the actual rates, which are predicated upon a five-year experience period. The rates promulgated must be submitted to the Superintendent of Insurance, who may order the rates withdrawn if in his opinion they are "inadequate, excessive, or unfairly discriminatory or otherwise unreasonable." Provision is made in the official rate for a  $2\frac{1}{2}$  per cent profit factor.<sup>1</sup>

**Investment.** The fire insurance company must invest the large reserve funds which it is required to carry for the protection of the policyholders. The profitable operation of investing depends upon the receipt of income as large as is consistent with the safety of the principal. Inasmuch as insurance premiums are payable in advance and on policies that run from one to five years, insurance companies have the use of funds that are repayable in the form of loss claims over prolonged periods. Even if the entire premium is eventually disbursed in the payment of losses and expenses, the policy may still prove profitable to the company in that the funds paid in premiums have produced income while retained by the company. As a result of the two kinds of operations of the company, the common stockholders' position is affected by the profitable operation of underwriting and of investing by the company.

**Statements.** Insurance companies are required in New York to file annual statements with the State Insurance Department. The statement is prescribed in form and usually shows the capital stock, income, disbursements, assets and liabilities, surplus, and

<sup>1</sup> The average cost of fire insurance 1939-1944 of 66 cents represents a decline of 40 per cent from the average cost of this type of property protection that prevailed at the beginning of the 1920's.

other funds, with supporting schedules. Those statements are available to the public. The financial statement issued by the company to the stockholders, however, usually includes only a balance sheet and a list of the security investments, and, in some recent reports, an income statement.

**Liabilities.** The liability side of the balance sheet of a fire and casualty insurance company consists largely of capital and reserves. The capital includes capital stock and net surplus. For instance, the capital account of Hartford Fire Insurance Company was:

	1944	1943	1942
Capital Stock (par \$10) . . . . .	\$12,000,000	\$12,000,000	\$12,000,000
Net Surplus . . . . .	70,000,000	65,000,000	60,000,000
	<u>\$82,000,000</u>	<u>\$77,000,000</u>	<u>\$72,000,000</u>

**Reserves.** The reserves include reserve for unearned premiums, voluntary or contingency reserve, reserve for outstanding losses, and miscellaneous reserves. Hartford Fire Insurance Company reported the following reserves:

	1944	1943	1942
Reserve for Unearned Premiums . . . . .	\$45,190,536	\$41,991,106	\$39,276,556
Voluntary Reserve . . . . .	15,491,611	13,490,012	9,282,098
Reserve for Outstanding Losses . . . . .	11,832,462	9,510,008	7,857,487
Reserve for Dividends . . . . .	1,200,000	1,200,000	1,200,000
Reserve for Taxes and all other claims . . . . .	3,450,000	3,906,959	4,025,638
	<u>\$77,164,609</u>	<u>\$70,098,085</u>	<u>\$61,641,779</u>

The reserve for unearned premiums is usually the largest reserve. Premiums are collected in advance and consequently represent a prepaid expense to policyholders and unearned income to the insurance company. For example, if a one-year policy is written on August 15, it will expire on August 15 of the following year. As of December 31 following the date of issuance, the policy will have  $7\frac{1}{2}$  months to run. The unearned premium, however, is calculated on the basis of half-months, with the result that on December 31 the balance sheet will show that  $\frac{9}{24}$  of the premium has been earned and  $\frac{15}{24}$  is unearned. The company's statement on December 31, therefore, will show an unearned premium reserve equal to  $\frac{15}{24}$  of the annual premium. This reserve is the estimated amount of premiums that the company would be obliged to return to the policyholders as return premiums for the unexpired terms if every policy in force were cancelled or terminated on the date of the balance sheet. Voluntary or contingency reserve represents a safety provision for any contingency that might arise. The other reserves include

reserve for outstanding losses or estimated losses on claims reported and unreported, reserve for dividends or dividends declared but unpaid, and reserve for taxes and all other liabilities.

## HARTFORD FIRE INSURANCE COMPANY

STATEMENT DECEMBER 31, 1944

<i>Assets</i>	
United States Bonds and Treasury Notes . . . . .	\$40,608,000
Bonds of other Governments (Canada, etc ) . . . . .	2,631,180
State, County, and Municipal Bonds . . . . .	4,340,388
Railroad Bonds . . . . .	5,536,045
Public Utility Bonds . . . . .	1,237,897
Miscellaneous Bonds . . . . .	107,700
Stocks . . . . .	76,921,011
Real Estate and Mortgages . . . . .	3,826,322
Cash . . . . .	16,243,449
Premiums in course of collection . . . . .	6,963,093
Accrued Interest . . . . .	328,431
Sundry Assets . . . . .	421,093
Total Assets . . . . .	<u>\$159,164,609</u>
<i>Liabilities</i>	
Reserve for Unearned Premiums . . . . .	\$45,190,536
Reserve for Losses and Loss Expense . . . . .	11,832,462
Reserve for Taxes . . . . .	3,000,000
Reserve for other Liabilities . . . . .	450,000
Reserve for Dividends . . . . .	1,200,000
Voluntary Reserve . . . . .	15,491,611
	<u>\$77,164,609</u>
Capital . . . . .	\$12,000,000
Surplus . . . . .	<u>70,000,000</u>
	<u>82,000,000</u>
Total Liabilities . . . . .	<u>\$159,164,609</u>

All stocks and bonds, except stocks of affiliated insurance companies, are carried in accordance with the ruling of the National Association of Insurance Commissioners. If Market prices of December 31, 1944, were used, the Admitted Assets and the Voluntary Reserve of this Company would be increased by the amount of \$931,262.

**Assets.** The assets of a fire insurance company consist of securities, cash, premiums in course of collection, real estate, and mortgages and miscellaneous assets. The securities which a company may purchase are subject to the regulations of the state. In New York State, for example, the restrictions may be classified as those applicable to (a) minimum capital investments, (b) reserve investments, and (c) residue and surplus fund investments. A company must invest an amount equal to the minimum capital required by law in the following classes of securities which are not in default as to principal or interest: (1) direct and guaranteed obligations of the federal government; (2) direct obligations of the State of New

York or of any county, district, or municipality in the state; (3) direct obligations of any other state; and (4) first mortgages up to two thirds of the value of unencumbered real property located in the State of New York or mortgages guaranteed by the Federal Housing Administration. At least 60 per cent of the total amount of the required minimum capital investments must be in securities in classes 1 and 2.

A company must also invest in specified types of securities up to 50 per cent of the aggregate amount of unearned premium and loss reserves. Securities eligible for the fulfillment of this requirement include government obligations, corporate obligations, preferred or guaranteed stocks, trustees' or receivers' obligations, acceptances and bills of exchange, mortgages, real estate, foreign investments, and stock and debentures of housing companies which must meet the qualifications specified in the law. Residue and surplus funds may be invested, in general, in the securities of any solvent issuer, with certain limitations specified in the law.

The investments of Hartford Fire Insurance Company, for example, consisted of:

	1944	1943	1942
Bonds:			
U S Gov't Bonds and Treasury Notes . . . . .	\$40,608,000	\$35,798,500	\$32,263,500
Bonds of other Governments . . . . .	2,631,180	2,279,535	2,708,625
State & Municipal . . . . .	4,340,388	4,406,123	4,760,572
Railroad . . . . .	5,536,045	5,337,335	4,797,590
Public Utility . . . . .	1,237,897	1,500,320	1,799,520
Miscellaneous . . . . .	107,700	189,220	245,591
	<u>\$54,461,210</u>	<u>\$49,511,033</u>	<u>\$46,575,398</u>
Stocks.			
Railroad, Public Utility, Bank & Misc. . . . .	<u>76,921,011</u>	<u>69,143,282</u>	<u>60,718,194</u>
Total . . . . .	<u>\$131,382,221</u>	<u>\$118,654,315</u>	<u>\$107,293,592</u>

*Security diversification.* As a group, fire insurance companies have maintained a high degree of diversification and unusual liquidity in their invested assets. This has been due in large measure to their relatively large investments in stocks, both preferred and common, which on the average have represented approximately 40 per cent of total admitted assets. As *Best's Insurance Reports* states:

In general, the fire companies have maintained a sufficient percentage of assets in so-called approved securities to cover adequately outstanding liabilities, and it is a fact that actively traded stocks are more liquid than many classes of bonds, and liquidity is an important element in view of the possible need for cash in the event of a conflagration.

The very nature of their operations makes liquidity of investments so necessary. The uncertainty of sudden large losses requires a substantial investment in highly marketable securities, which is afforded more readily by stocks than by bonds and mortgages. At the same time, the higher yield and the market appreciation in a rising stock market provide additional income to offset underwriting losses. Stock investments of Hartford Fire Insurance Company, for example, represented 48.3 per cent of total admitted assets in 1944, compared to 46.9 per cent in 1943 and 45.4 per cent in 1942.

*Security valuation.* Prior to 1931 it was generally customary for insurance companies, particularly fire and casualty companies, to value their bonds and stocks at prevailing market quotations at the end of the year. In 1931, however, the National Association of Insurance Commissioners (then known as the National Convention of Insurance Commissioners) established what has been called "Association Values," which were arbitrary values theoretically representing "fair value" in contrast to "market value" in the instance of securities which were selling at relatively low prices. Since 1941, however, bonds amply secured and not in default have been carried at amortized values; stocks and non-amortizable bonds have been carried at the market value as of December 1 of each year.

*Miscellaneous assets.* The other assets of a fire or casualty company consist chiefly of cash, premiums in course of collection, real estate and mortgages, and miscellaneous assets. For example, Hartford Fire Insurance Company reported the following assets in addition to investments:

	1944	1943	1942
Cash . . . . .	\$16,243,449	\$16,828,421	\$14,022,041
Premiums in Course of Collection . . . . .	6,963,093	7,260,273	7,959,523
Accrued Interest . . . . .	328,431	320,816	312,574
Real Estate and Mortgages . . . . .	3,826,322	3,866,820	3,932,639
Sundry Assets . . . . .	421,093	167,440	121,410
	<u>\$27,782,388</u>	<u>\$28,443,770</u>	<u>\$26,348,187</u>

*Admitted assets.* The total assets of a company generally exceed the total "admitted assets." The total assets include all the assets of the company. Assets that are not in accord with the state law or Insurance Department rulings are excluded from the total assets, and the balance is referred to as "total admitted assets." For example, Hartford Fire Insurance Company in 1944 reported total assets of \$159,752,007 but total admitted assets of \$159,164,609. The difference of \$587,398 represented assets that were not admissible.

**Liquidating value.** The liquidating value of the common stock represents the value of the stock in the event of liquidation. It is measured by the sum of the capital stock, surplus, 40 per cent of the unearned premium reserve, and the voluntary or contingency reserve. On the theory that 60 per cent of the unearned premiums will cover all future losses under the policies in force, it is assumed that at least 40 per cent of the unearned premium reserve will eventually become earned surplus.<sup>2</sup> All stocks and non-amortizable bonds shown on the asset side of the balance sheet are carried at their December 1 market prices, in accordance with the ruling of the National Association of Insurance Commissioners. The voluntary reserve of \$15,491,611 reported by Hartford Fire Insurance Company in 1944 was based on the December 1, 1944, valuation of the securities. This compared with a voluntary reserve of \$13,490,012 in 1943 and \$9,282,098 in 1942. The annual reports stated, however, that if market values of December 31 had been used, the "admitted assets" and the voluntary reserve would have been increased by \$931,262 in 1944, by \$905,442 in 1943, and by \$613,306 in 1942. Since recognition must be given to the increase in market values between December 1 and December 31, the total liquidating value of the common stock on December 31 was \$116,499,087 in 1944, \$108,191,896 in 1943, and \$97,606,026 in 1942.

	1944	1943	1942
Capital Stock . . . . .	\$12,000,000	\$12,000,000	\$12,000,000
Surplus . . . . .	70,000,000	65,000,000	60,000,000
40 Per Cent of Unearned Premium Reserve	18,076,214	16,796,442	15,710,622
Voluntary Reserve . . . . .	16,422,873	14,395,454	9,895,404
Total Liquidating Value . . . . .	\$116,499,087	\$108,191,896	\$97,606,026

On the basis of 1,200,000 shares outstanding, the liquidating value per share in 1944 was \$97.08 (\$116,499,087/1,200,000). This compared with \$90.16 in 1943, and \$81.34 in 1942.

On the other hand, similar recognition must be given to any decrease in market values as of December 31. For example, the same company reported as follows on the basis of December 1, 1941, values:

Capital Stock . . . . .	\$12,000,000
Surplus . . . . .	60,000,000
40 Per Cent of Unearned Premium Reserve . . . . .	15,292,706
Voluntary Reserve . . . . .	9,266,143
Total Liquidating Value . . . . .	\$96,558,849

<sup>2</sup> Best suggests the following percentages according to the type of insurance: directly written, 40 per cent; reinsurance premiums in the fire and marine field, 35 per cent; casualty and security fields, 15-40 per cent.

The company reported, however, that if market values of December 31, 1941, had been used, the admitted assets and the voluntary reserve would have been reduced by \$1,553,899 and would have amounted to \$95,004,950. On this basis the liquidating value was \$79.17 a share.

**Exhibits.** The statement of income and expense of a fire insurance company on an "incurred" basis is presented in the form of exhibits. A company usually reports three exhibits: underwriting, investment, and surplus.

*Underwriting exhibit.* The underwriting exhibit of the Hartford Fire Insurance Company was as follows:

	1944	1943	1942
Net Premiums Written for the Year . . . . .	\$54,479,465	\$50,796,083	\$52,054,583
Increase in Unearned Premium Reserve . . . . .	3,199,431	2,714,550	1,044,790
Net Premiums Earned . . . . .	<u>51,280,034</u>	<u>48,081,533</u>	<u>51,009,793</u>
Less:			
Underwriting Expenses . . . . .	21,920,737	21,035,245	21,078,997
Losses Incurred . . . . .	<u>27,892,833</u>	<u>23,936,283</u>	<u>28,249,333</u>
	<u>49,813,570</u>	<u>44,971,528</u>	<u>49,328,330</u>
Net Underwriting Profit . . . . .	\$ 1,466,464	\$ 3,110,005	\$ 1,681,463

The premiums written represents the aggregate amount of the premiums upon all policies issued during the year covered by the statement whether the premiums had been collected or not at the close of the year. The net premiums written is the balance after deducting all returned and reinsurance premiums. Returned premiums are the premiums returned on cancelled policies. Reinsurance premiums represent the net cost to the company of distributing the risk especially for large policies through reinsurance. For example, in 1943 the total premiums written by Hartford Fire Insurance Company aggregated \$71,557,000. Inasmuch as the company returned premiums of \$9,267,000 and deducted \$11,494,000 in reinsurance premiums, the net premiums written amounted to \$50,796,000. Net premiums written, therefore, indicate the net amount of business obtained by the company during the year. Net premiums earned represents the adjustment of the net premiums written in accordance with the increase or decrease during the year of the liability of the company for unearned premiums. For instance, the \$54,479,465 of net premiums written during 1944 by the Hartford Fire Insurance Company were not all earned, since unearned premium reserve had increased by \$3,199,431, thereby reducing the net premiums earned for 1944 to \$51,280,034. When a company's volume of business expands, as evidenced by the increase

in net premiums written, the net premiums earned will always be less than the net premiums written. Inasmuch as premiums are paid in advance, an increased volume of business necessitates the setting up of a larger reserve for unearned premiums. The reverse is true in the instance of a declining volume of business. Net underwriting profit represents the balance of the net premiums earned after the deduction of underwriting expenses and of losses incurred during the year.

*Investment exhibit.* The investment exhibit reports the results of the investment operations for the year. Hartford Fire Insurance Company reported as follows:

	1944	1943	1942
Interest & Dividends Earned . . . . .	\$4,713,819	\$4,463,714	\$4,214,564
Investment Expense . . . . .	459,161	455,128	444,819
Net Interest & Dividends Earned . . . . .	<u>4,254,658</u>	<u>4,008,586</u>	<u>3,769,745</u>
Adjustments:			
Gain on Sales of Assets . . . . .	95,798	161,043	Dr. 52,680
Appreciation in Assets . . . . .	5,095,388	6,324,446	Dr. 1,437,180
	<u>\$5,191,186</u>	<u>\$6,485,489</u>	<u>\$1,489,860</u>
Net Investment Profit . . . . .	\$9,445,844	\$10,494,075	\$2,279,885

The net income earned represents the income in the form of interest and dividends earned on the investments in bonds and stocks. The adjustments include the actual gain or loss on the sale of securities in the portfolio and the book appreciation or depreciation in the securities held. The Hartford Fire Insurance Company reported a gain on the sale of securities of \$95,798 in 1944 and of \$161,043 in 1943 but a loss of \$52,680 in 1942. The company also reported appreciation in securities of \$5,095,388 in 1944 and of \$6,324,446 in 1943 but a depreciation of \$1,437,180 in 1942. As a result of those adjustments, the net income was increased by \$5,191,186 in 1944 and by \$6,485,489 in 1943 but was decreased by \$1,489,860 in 1942. The balance is the net investment profit.

*Surplus exhibit.* The surplus exhibit reconciles the surplus in the balance sheet at the close of the year. For example, the surplus exhibit of the Hartford Fire Insurance Company was:

	1944	1943	1942
Surplus, beginning of year . . . . .	\$65,000,000	\$60,000,000	\$60,000,000
Net Underwriting Profit . . . . .	1,466,464	3,110,055	1,681,463
Net Investment Profit . . . . .	9,445,844	10,494,075	2,279,885
Canadian Exchange . . . . .	27,558	30,375	56,505
	<u>\$75,939,866</u>	<u>\$73,634,505</u>	<u>\$64,017,853</u>
Dividends Paid . . . . .	3,000,000	3,000,000	3,000,000
Federal Income Tax . . . . .	938,268	1,299,162	870,164
Connecticut Investment Tax . . . . .		127,378	131,734
Increase in Voluntary Reserve . . . . .	2,001,598	4,207,914	15,955
	<u>\$ 5,939,866</u>	<u>\$ 8,634,454</u>	<u>\$ 4,017,853</u>
Surplus, end of year . . . . .	\$70,000,000	\$65,000,000	\$60,000,000



The company began the year 1944 with a surplus of \$65,000,000. The surplus was increased by a net underwriting profit of \$1,466,464, a net investment profit of \$9,445,844, and a gain of \$27,558 in Canadian exchange, resulting in a total surplus of \$75,939,866. Certain deductions were made, however, in the form of dividend payments of \$3,000,000 and federal income tax of \$938,268. The Connecticut investment tax, which was reported in the surplus exhibit in 1943 and in 1942, was included in underwriting expenses in 1944. In addition, the company transferred \$2,001,598 from surplus to the voluntary reserve. As a result of these deductions and the adjustments, the surplus was \$70,000,000 at the end of 1944.

**Expense and loss ratios.** The success of the underwriting operations of the company is tested by two ratios: expense ratio and loss ratio.

*Expense ratio.* The expense ratio is expressed as the relation between the underwriting expenses incurred and the net premiums written. The underwriting expenses include such overhead or operating expenses as commissions, rents, salaries, and taxes. For example, Hartford Fire Insurance Company in 1944 reported underwriting expenses of \$21,920,737 and net premiums written of \$54,479,465, or an expense ratio of 40.2 per cent, compared to 41.3 per cent in 1943 and 40.5 per cent in 1942. The purpose of the expense ratio is to determine the cost to the company of obtaining the volume of business. The expense ratio of Hartford Fire Insurance Company compared favorably with the average of all companies, which has been as follows:<sup>3</sup>

1938	48 4 %	1940	44 5 %	1942	39 7 %	1944	41.3 %
1939	47 6	1941	42.3	1943	42.3		

*Loss ratio.* The loss ratio is calculated as the relation between the losses incurred (including loss adjustment expense) and the net premiums earned. For example, Hartford Fire Insurance Company in 1944 reported losses incurred of \$27,892,833 and net premiums earned of \$51,280,034, or a loss ratio of 54.3 per cent. This compared with 49.7 per cent in 1943 and 55.4 per cent in 1942. The purpose of the loss ratio is to determine whether the quality of the business, as measured by losses, is satisfactory. It is the major factor determining the profitableness of the underwriting operations. The Hartford Fire Insurance Company, however, had a low ratio compared with the average for all companies:<sup>4</sup>

1938	46.7 %	1940	50.2 %	1942	59.0 %	1944	57.3 %
1939	46 8	1941	53.3	1943	52.1		

<sup>3</sup> *Best Insurance Reports.*

<sup>4</sup> *Ibid.*

*Net underwriting profit/net premiums earned.* The expense ratio and the loss ratio are closely related. Some companies follow a very cautious policy of investigating each risk thoroughly and often at considerable expense. While this policy results in a high expense ratio, it is usually compensated for by smaller losses as indicated by the loss ratio. On the other hand, other companies are rather liberal in the assumption of risk, with the resultant low expense ratio but a correspondingly higher loss ratio. The relationship of these factors is reflected in the ratio "Net underwriting profit/net premiums earned," which provides a measure of the underwriting results of companies writing the same type of insurance. The net underwriting profit of the Hartford Fire Insurance Company represented a return of 2.9 per cent in 1944, compared to 6.4 per cent in 1943 and 3.3 per cent in 1942.

An analysis of the distribution of losses by the Hartford Fire Insurance Company revealed the following:

	<i>Fire</i>	<i>Ocean Marine</i>	<i>Motor Vehicle</i>	<i>Inland Nav &amp; Transp.</i>	<i>Tornado</i>	<i>Haal</i>
1940 . . . .	40.8%	42.4%	55 9%	54 0%	42.9%	33.3%
1941 . . . .	39.8	53.5	57 2	56.1	39 0	61 3
1942 . . . .	38.8	94 8	42 7	61.3	54.3	68.5
1943 . . . .	43.3	45 7	38 5	63 7	66 4	78 1
1944 . . . .	44.4	53.0	53 8	62.6	72.4	76 4

*Earnings per share.* The earnings per share of the stock are usually calculated before and after taxes. Earnings per share before taxes reflect the earning power of the company. Total net earnings represent the sum of the net underwriting profit (statutory underwriting gains) and the net investment income plus 40 per cent of any increase or minus 40 per cent of any decrease in the unearned premium reserve. For instance, the total net earnings of Hartford Fire Insurance Company were calculated as follows:

	<i>1944</i>	<i>1943</i>	<i>1942</i>
Net Underwriting Profit . . . . .	\$1,466,464	\$3,110,055	\$1,681,463
Net Investment Income . . . . .	4,254,658	4,008,586	3,769,745
40 Per Cent of Increase in Unearned Premium Reserve . . . . .	<u>1,279,772</u>	<u>1,085,820</u>	<u>1,081,024</u>
Total Net Earnings . . . . .	<u>\$7,000,894</u>	<u>\$8,204,461</u>	<u>\$6,532,232</u>

Net underwriting profit includes underwriting profit and loss items. Net investment income, however, excludes realized or unrealized profits or losses on securities and other assets, as well as any unusual adjustments of surplus. In view of the fact that the company had 1,200,000 shares outstanding, the earnings were at the rate of \$5.84 in 1944, compared to \$6.83 in 1943 and \$4.89 in 1942.

*Sources of earnings.* Analysis of the sources of the earnings emphasizes the importance of investment operations to the success of a fire insurance company:

## HARTFORD FIRE INSURANCE COMPANY

	<i>Under- writing</i>	<i>Invest- ment</i>	<i>Equity in Increase in Unearned Premium Reserve</i>	<i>Total</i>
1940 . . . .	\$1 82	\$2 98	\$0 55	\$5 35
1941 . . . .	2.22	3 11	0.90	6 23
1942 . . . .	1.40	3.14	0 35	4 89
1943 . . . .	2 59	3 34	0 90	6 83
1944 . . . .	1.22	3 55	1.07	5 84

In each year from 1940 to 1944, inclusive, the earnings on investments exceeded the earnings on underwriting.

*Earnings after taxes.* Though earnings per share before taxes reflects the earning power of the company, earnings per share after taxes are more pertinent to the stockholder as reflecting the earnings available for distribution as dividends. Net earnings after taxes of the Hartford Fire Insurance Company in 1944 were \$6,062,-626, at the rate of \$5.06 a share, calculated as follows:

	1944	1943	1942
Total Net Earnings . . . . .	\$7,000,894	\$8,204,461	\$5,873,898
Federal Income Tax and Connecticut Tax on Investment Income . . . . .	938,268	1,426,540	1,001,898
Net Earnings after taxes . . . . .	\$6,062,626	\$6,777,921	\$4,872,000

This compared with \$5.65 in 1943 and \$4.06 in 1942.

*Market value.* The market value of a share of stock is usually measured in relation to the liquidating value, the dividend, and the amount earned per share after taxes. The market value should approximate the liquidating value. This condition has been charac-

	<i>Market Value</i>	<i>Liquidating Value</i>	<i>Market/ Liquidating</i>	<i>Dividend</i>	<i>Yield</i>	<i>Market/ Earned</i>
1940 . . . .	\$78	\$76 87	1 0	\$2 50	3.2%	16
1941 . . . .	87	79 17	1 1	2.50	2 8	15
1942 . . . .	82	81.34	1 0	2.50	3 0	20
1943 . . . .	97	90 16	1.7	2 50	2.6	17
1944 . . . .	98	97 08	1.0	2.50	2 5	19

teristic of Hartford Fire Insurance Company stock. Inasmuch as it is the common practice of fire insurance companies to plow the underwriting profit back into the business, the dividend on the stock is usually restricted to the investment profit. Under normal conditions a conservatively managed fire insurance company will show a total of investment income and earned premiums in excess of losses and expenses. In practice, however, as the *Spectator Insurance Year Book* points out:

Many of the more conservative companies limit dividend distribution to an amount not exceeding the investment income earned. Some, which are still more conservative, limit the amount distributed in the form of dividends to a figure not exceeding 75 per cent of investment income. This permits the company to retain 25 per cent of its investment income together with all underwriting profits, if any, as an addition to surplus for the protection of both policyholders and stockholders against the occurrence of a catastrophe or other abnormal losses, or against the shrinkage in the market value of the media in which the company's funds are invested.

The relation of the dividend to the investment profit in the instance of the Hartford Fire Insurance Company is shown by the following:

	<i>Investment Income</i>	<i>Dividend</i>	<i>Dividend/Investment Income</i>
1940 . . .	\$2 98	\$2.50	83 8%
1941 . . .	3.11	2 50	80 4
1942 . . .	3 14	2.50	79.6
1943 . . .	3 34	2 50	74.8
1944 . . .	3 55	2.50	70.4

The company paid out in dividends an average of approximately 78 per cent of the investment income. The stock sold to yield an average of about 3 per cent and at about 17 times earnings.

### Review Questions

1. Name the two classes of operations of a fire insurance company.
2. Discuss the diversification of the types of risks underwritten.
3. Discuss the basis of profitable operation of underwriting and of investing
4. Indicate the general nature of the financial statements issued by fire insurance companies.
5. Indicate the chief items on the liability side of the balance sheet.
6. Discuss the significance of the reserve for unearned premiums.
7. Indicate the significance of the voluntary or contingency reserve.
8. Name the chief assets of a company.
9. Discuss the legal restrictions on securities eligible for investment.
10. Account for the policy of diversification and liquidity of investments.
11. Indicate the basis of valuation of bonds and stocks.
12. Distinguish between "total assets" and "total admitted assets."
13. Explain the calculation and the significance of the liquidating value per share of stock.
14. Name the types of exhibits included in a company's report.
15. Distinguish between the following items in the underwriting exhibit: premiums written, net premiums written, net premiums earned, and net underwriting profit.
16. Explain the meaning of the following items in the investment exhibit: net income received, loss on sale of securities, gain on sale of securities, depreciation in securities, appreciation in securities, and net investment profit.
17. Explain the purpose of the surplus exhibit.

18. Name the two ratios used to test the success of the underwriting operations
19. Explain the calculation and significance of the expense ratio.
20. Explain the calculation and significance of the loss ratio.
21. Discuss the relationship of the expense ratio and the loss ratio.
22. Discuss the significance of the calculation of earnings per share before taxes.
23. Explain the calculation of earnings per share after taxes.
24. Discuss the significance of the investment operations to the company from the standpoint of earnings.
25. Explain the significance and calculation of earnings per share after taxes.
26. Discuss the relationship of the market value per share to the liquidating value per share.
27. Explain the relationship between the investment profit and the dividend.
28. Comment on the yield and price-earnings ratio of insurance stocks.

### Assignment

- (a) Calculate the liquidating value per share from the following data:

Capital Stock . . . . .	\$ 5,000,000
Surplus . . . . .	86,357,000
Unearned Premium Reserve . . . . .	26,494,000
Voluntary Reserve, Dec 1 . . . . .	1,000,000
Voluntary Reserve, Dec. 31 . . . . .	6,988,000
Par Value of Stock . . . . .	\$2 50

- (b) Calculate the net premiums earned and the net underwriting profit from the following data:

Losses Incurred . . . . .	\$15,463,000
Increase in Unearned Premium Reserve . . . . .	2,553,000
Underwriting Expense . . . . .	10,798,000
Net Premiums Written . . . . .	29,468,000

- (c) Calculate the net investment profit from the following data:

Investment Expenses . . . . .	\$ 163,000
Realized Investment Gain . . . . .	153,000
Gross Interest and Rents Received . . . . .	4,993,000
Gain in Value of Investments . . . . .	10,841,000

- (d) Calculate the expense and loss ratios from the following data:

Underwriting Expense . . . . .	\$10,798,000
Net Premiums Earned . . . . .	26,915,000
Net Premiums Written . . . . .	29,468,000
Losses Incurred . . . . .	15,463,000

- (e) Calculate the earnings per share before and after taxes from the following data:

Net Underwriting Profit . . . . .	\$ 654,000
Taxes . . . . .	886,000
Increase in Unearned Premium Reserve . . . . .	2,553,000
Net Investment Income . . . . .	4,830,000
Realized Investment Gain . . . . .	153,000
Gain in Value of Investments . . . . .	10,841,000
Number of Shares . . . . .	2,000,000

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## APPENDIX A

# SOURCES OF INFORMATION

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The compilation of pertinent information is the first task of the investor. The following partial classification is presented for the convenience of the investor.

**Official reports.** The official reports of the issuer constitute the primary source of information and are issued annually, and are sometimes supplemented by interim reports.

**Financial periodicals.** Some periodicals provide information with respect both to companies and to industries and also with respect to general business. They include:

*Analysts Journal:* quarterly, The New York Society of Security Analysts, New York.

*Bank & Quotation Record:* monthly, William B. Dana Company, New York.

*Barron's:* weekly, Barron's Publishing Company, Boston.

*Bond Buyer:* weekly, The Bond Buyer, New York.

*Business Week:* weekly, McGraw-Hill Publishing Company, New York.

*Commercial and Financial Chronicle:* bi-weekly, William B. Dana Company, New York.

*Dun's Review:* monthly, Dun & Bradstreet, New York.

*Exchange:* monthly, New York Stock Exchange, New York.

*Financial World:* weekly, Guenther Publishing Company, New York.

*Investment Banking:* monthly, Investment Bankers Association of America, Chicago.

*Journal of Commerce:* daily, Journal of Commerce Company, New York.

*Magazine of Wall Street:* bi-weekly, Ticker Publishing Company, New York.

*Monthly Earnings Record:* monthly, William B. Dana Company, New York.

*State and Municipal Compendium:* semi-annually, William B. Dana Company, New York.

*Wall Street Journal:* daily, Dow, Jones & Company, New York.

**Trade publications.** Certain magazines are devoted exclusively to special fields. Among these are:

Banks — *Banking*: monthly, American Bankers Association, New York.

Electric power — *Electrical World*: weekly, McGraw-Hill Publishing Company, New York.

Electric railways — *Transit Journal*: monthly, McGraw-Hill Publishing Company, New York.

Gas — *American Gas Association Monthly*: American Gas Association, New York.

Iron and steel — *Iron Age*: weekly, Chilton Company, Philadelphia.

Mining — *Engineering and Mining Journal*: monthly, McGraw-Hill Publishing Company, New York.

Petroleum — *National Petroleum News*: weekly, National Petroleum Publishing Company, Cleveland.

Public utilities — *Public Utilities Fortnightly*: Public Utilities Reports, Baltimore.

Steam railroads — *Railway Age*: weekly, The Simmons-Boardman Publishing Corporation, Philadelphia.

Steel — *Steel*: weekly, Penton Publishing Company, Cleveland.

Telephone — *Bell Telephone Quarterly*: American Telephone & Telegraph Company, New York.

Textile — *Textile World*: monthly, McGraw-Hill Publishing Company, New York.

**Federal commissions.** Pertinent information with respect to individual companies is found in the reports issued by such federal regulatory commissions as the Interstate Commerce Commission, the Federal Power Commission, the Federal Communications Commission, and the Securities and Exchange Commission. The registration statements and the prospectuses filed with the latter commission in connection with new security issues are especially informative.

**Stock exchange listing statements.** The listing statements issued in connection with new listings on the various exchanges occasionally contain information not previously published elsewhere.

**Economic bulletins.** Among the bulletins on general business conditions issued by banking institutions are:

*Bulletin*: monthly, The National City Bank of New York, New York.

*Business Bulletin*: monthly, The Cleveland Trust Company, Cleveland.

*Guaranty Survey*: monthly, Guaranty Trust Company, New York.

*Monthly Review*: monthly, individual Federal Reserve Banks.

**Investment services.** Investment services may be classed as those which emphasize the reporting of statistical data and those which emphasize the interpretation of data. Among the former services are Moody, Standard & Poor, Fitch, and Best, and among the latter services are Babson, Brookmire, Alexander Hamilton, and United.

**Government reports.** Among the many publications of government departments and agencies are:

Comptroller of the Currency: annual report.

*Domestic Commerce*: monthly, U. S. Department of Commerce.

Federal Deposit Insurance Corporation: annual report.

*Federal Home Loan Bank Review*: monthly, Federal Home Loan Bank Administration.

*Federal Reserve Bulletin*: monthly, Board of Governors of the Federal Reserve System.

*Foreign Commerce Yearbook*: annually, U. S. Department of Commerce.

Secretary of the Treasury: annual report.

*Statistical Abstract*: annually, U. S. Department of Commerce.

*Survey of Current Business*: monthly, U. S. Department of Commerce.

*Treasury Bulletin*: monthly, U. S. Treasury Department.



## APPENDIX B

### READING THE FINANCIAL PAGE

**New York Stock Exchange.** The following excerpts from the report of transactions on the New York Stock Exchange are taken from *The Wall Street Journal*:

#### NEW YORK STOCK EXCHANGE STOCK TRANSACTIONS

Friday, November 16, 1945

1945		**\$									Closing	
High	Low	Div	Stocks	Sales	Open	High	Low	Close	Chge		Bid	Asked
189	153 $\frac{1}{4}$	6	Al Ch & Dye	900	188	189	186	186	- 3		182 $\frac{1}{2}$	186
112 $\frac{3}{8}$	89 $\frac{1}{2}$	3	Am Can	500	103 $\frac{1}{2}$	105	103 $\frac{1}{2}$	105	+ 1 $\frac{3}{4}$		104 $\frac{1}{4}$	106
196	183 $\frac{3}{4}$	<sup>a</sup> 7	Am Can pf	160	196	196	196	196	+ $\frac{3}{4}$		196	197 $\frac{1}{2}$

\*\* Dividends, unless otherwise specified, are total paid or payable in 12 months to and including the payable date of the most recent dividend announcements.

<sup>a</sup> Annual basis

The above report of transactions in the designated stocks gives the investor information concerning: (a) the price range for the year; (b) the dividend; (c) the volume of sales for the day; and (d) the prices for the day. Interpreting the quotation for Allied Chemical & Dye common stock, the price of the stock from January 2, 1945, to November 16, 1945, ranged from a high of \$189 a share to a low of \$153 $\frac{1}{4}$  a share. A dividend is paid on the stock at an annual rate of \$6 a share. The total volume of sales on November 16 was 900 shares. The first or opening transaction in the stock was at \$188 a share; during the trading day the highest price at which the stock sold was \$189 a share and the lowest price \$186 a share; the last sale in the stock before the close of the trading day was at \$186 a share. The net change of " - 3 " means that the closing price of \$186 a share on November 16 was three points lower than the closing price in the stock on the preceding trading day. The closing price on November 15 was \$189 a share. After the last transaction in the stock on November 16, and before the close of the trading day, buyers of the stock were offering to pay \$182 $\frac{1}{2}$  a share while sellers were asking \$186 a share.

Quotations on preferred stocks are designated "pf" as, for example, American Can preferred, which closed at \$196 a share. Unless so designated, the quotation refers to the common stock of the company; for

example, American Can common, which closed at \$105 a share. The net change in the closing prices of a stock may be "minus" or "plus." The significance of "minus" has been explained above in the instance of Allied Chemical & Dye common stock. The closing price of American Can common of \$105 represented an increase of  $1\frac{3}{4}$  points over the closing price on November 15, which was \$103 $\frac{1}{4}$ .

The following excerpt of bond transactions on the New York Stock Exchange for the same day is taken from *The Wall Street Journal*:

### NEW YORK STOCK EXCHANGE BONDS

Friday, November 16, 1945

1945		Bonds	Sales*	Open	High	Low	Close	Chge
High	Low							
102 $\frac{1}{2}$	100 $\frac{1}{4}$	Goodrich 2 $\frac{3}{4}$ 's	'65	37	102 $\frac{1}{2}$	102 $\frac{1}{4}$	102 $\frac{1}{2}$	+ $\frac{1}{2}$
127 $\frac{1}{8}$	118 $\frac{1}{2}$	Penn R.R gen 4 $\frac{1}{4}$ 's	'81	12	127 $\frac{1}{8}$	126 $\frac{3}{4}$	126 $\frac{3}{4}$	- $\frac{1}{4}$

\* Sales in \$1,000

The price of Goodrich 2 $\frac{3}{4}$  per cent bonds, due in 1965, ranged from a high of \$1,025 per \$1,000 principal value to a low of \$1,002.50 during the period January 2 to November 16, 1945. On November 16 the transactions in the bond involved a principal value of \$37,000; the first or opening sale was at \$1,022.50 per bond, which was also the lowest price during the trading day; the highest price at which the bond sold during the trading day was \$1,025; the last sale in the bond was at \$1,025; the closing price of \$1,025 represented an increase of  $\frac{1}{2}$  a point over the closing price on November 15, which was \$1,020.

**Over-the-counter market.** The following excerpts of over-the-counter market quotations are taken from *The Wall Street Journal*:

### OVER-THE-COUNTER MARKET QUOTATIONS

Friday, November 16, 1945

Obtained from National Association of Securities Dealers, Inc., and other sources, but are unofficial. Origin of any quotation furnished on request.

#### STOCKS

##### INDUSTRIAL

	Bid	Asked	Prev. Bid
Am Optical Co . . . . .	44 $\frac{1}{2}$	46 $\frac{1}{2}$	45
Electrolux Corp. . . . .	16 $\frac{1}{4}$	17 $\frac{1}{4}$	16 $\frac{1}{4}$

##### UTILITY STOCKS

Delaware P & L Co com. . . . .	24	25 $\frac{1}{2}$	24
Hartford Elec Light . . . . .	67 $\frac{1}{2}$	69 $\frac{1}{2}$	66 $\frac{1}{2}$

##### INSURANCE COMPANIES

Aetna Life . . . . .	50 $\frac{3}{4}$	52 $\frac{1}{2}$	50 $\frac{1}{4}$
Camden Fire . . . . .	23 $\frac{3}{8}$	25 $\frac{1}{8}$	23 $\frac{3}{8}$

BANKS AND TRUST COMPANIES

Chase . . . .	\$1 40	45 $\frac{5}{8}$	47 $\frac{5}{8}$	46 $\frac{1}{8}$
First Nat N Y .	80 00	1,940	2,000	1,940

BONDS

NEW YORK CITY

<i>Rate</i>	<i>Maturity</i>	<i>Bid</i>	<i>Asked</i>	<i>Yield</i>
4 $\frac{1}{2}$	July 1967	135	137 $\frac{1}{4}$	2 30
4	May 1959	125 $\frac{1}{4}$	127	1.75

Quotations in the over-the-counter market are in terms of bid and asked prices. In the instance of bank stocks, the annual dividend is shown, as for example, \$1.40 for Chase National Bank of New York and \$80.00 for the First National Bank of New York.

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## APPENDIX C

### CUSTOMER'S AGREEMENT

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#### CUSTOMER'S AGREEMENT — CASH ACCOUNT

I hereby represent that I am over 21 years of age; that I am not connected as an employee, member, or partner of any Security or Commodity Exchange or Member Firm thereof, or any Broker, Firm or Corporation engaged in the business of dealing in securities or commodities. If I become such I hereby agree to notify you in writing immediately.

In the event you fail to receive payment for securities purchased or fail to receive securities sold for my account by the delivery date of said securities, you may, without prior demand for margin and without notice to me of the time and place of sale, sell securities held by you for me or buy in securities of which my account may be short; and no specific notice or demand shall invalidate this waiver.

Notices, demands or communications from you to me, not personally delivered, shall be deemed personally delivered to me and their receipt conceded, either upon proof of the due mailing thereof, or upon proof of the delivery thereof, charges prepaid, to a radio, telegraph or cable company, addressed to me at my last designated address. This agreement and the enforcement thereof shall be governed by the laws of the State of New York.

Yes-----  
Citizen U. S. A.?

No-----  
Signed----- If answer is No, citizen of what country?  
(Not merely initials. If woman state "Miss" or "Mrs.")

-----  
Mailing Address-----

Firm-----

Nature of Business-----

If woman and married, state husband's occupation and business connection.

-----  
Tel.----- Date-----

[Reverse Side]

Reference.....

Address.....

Reference.....

Address.....

ABC &amp; Co.

One Wall Street, New York.

## CUSTOMER'S AGREEMENT — MARGIN ACCOUNT

A B C & Company  
New York, N. Y.

Dear Sirs:

In consideration of your accepting one or more accounts of the undersigned (whether designated by name, number, or otherwise) and your agreeing to act as brokers for the undersigned in the purchase or sale of securities or commodities, the undersigned agrees as follows:

1. All transactions under this agreement shall be subject to the constitution, rules, regulations, customs and usages of the exchange or market, and its clearing house, if any, where the transactions are executed by you or your agents, and where applicable, to the provisions of the Securities Exchange Act of 1934, the Commodities Exchange Act, and present and future acts amendatory thereof and supplemental thereto, and the rules and regulations of the Federal Securities and Exchange Commission, the Board of Governors of the Federal Reserve System and of the Secretary of Agriculture in so far as they may be applicable.

2. Whenever any statute shall be enacted which shall affect in any manner or be inconsistent with any of the provisions hereof, or whenever any rule or regulation shall be prescribed or promulgated by the New York Stock Exchange, the Federal Securities and Exchange Commission, the Board of Governors of the Federal Reserve System and/or the Secretary of Agriculture which shall affect in any manner to be inconsistent with any of the provisions hereof, the provisions of this agreement so affected shall be deemed modified or superseded, as the case may be, by such statute, rule or regulation, and all other provisions of the agreement and the provisions as so modified or superseded, shall in all respects continue and be in full force and effect.

3. Except as herein otherwise expressly provided, no provision of this agreement shall in any respect be waived, altered, modified or amended unless such waiver, alteration, modification or amendment be committed to writing and signed by a member of your firm.

4. All monies, securities, commodities or other property which you may at any time be carrying for the undersigned or which may at any time be in your possession for any purpose, including safekeeping, shall be subject to a general lien for the discharge of all obligations of the undersigned to you, irrespective of whether or not you have made advances in connection with such securities, commodities or other property, and irrespective of the number of accounts the undersigned may have with you.

5. All securities and commodities or other property, now or hereafter held by you, or carried by you for the undersigned (either individually or jointly with others), or deposited to secure the same, may from time to time and without notice

to me be carried in your general loans and may be pledged, replighted, hypothecated or re-hypothecated, separately or in common with other securities and commodities or other property, for the sum due to you thereon or for a greater sum and without retaining in your possession and control for delivery a like amount of similar securities or commodities.

6. Debit balances of the accounts of the undersigned shall be charged with interest, in accordance with your usual custom, and with any increases in rates caused by money market conditions, and with such other charges as you may make to cover your facilities and extra services.

7. You are hereby authorized, in your discretion, should the undersigned die or should you for any reason whatsoever deem it necessary for your protection, to sell any or all of the securities and commodities or other property which may be in your possession, or which you may be carrying for the undersigned (either individually or jointly with others), or to buy in any securities, commodities or other property of which the account or accounts of the undersigned may be short, or cancel any outstanding orders in order to close out the account or accounts of the undersigned in whole or in part or in order to close out any commitment made in behalf of the undersigned. Such sale, purchase or cancellation may be made according to your judgment and may be made, at your discretion, on the exchange or other market where such business is then usually transacted, or at public auction or at private sale, without advertising the same and without notice to the undersigned or to the personal representatives of the undersigned, and without prior tender, demand or call of any kind upon the undersigned or upon the personal representatives of the undersigned, and you may purchase the whole or any part thereof free from any right of redemption, and the undersigned shall remain liable for any deficiency; it being understood that a prior tender, demand or call of any kind from you, or prior notice from you, of the time and place of such sale or purchase shall not be considered a waiver of your right to sell or buy any securities and/or commodities and/or other property held by you, or owed you by the undersigned, at any time as hereinbefore provided.

8. The undersigned will at all times maintain margins for said accounts, as required by you from time to time.

9. The undersigned undertakes, at any time upon your demand, to discharge obligations of the undersigned to you, or, in the event of a closing of any account of the undersigned in whole or in part, to pay you the deficiency, if any, and no oral agreement or instructions to the contrary shall be recognized or enforceable.

10. In case of the sale of any security, commodity, or other property by you at the direction of the undersigned and your inability to deliver the same to the purchaser by reason of failure of the undersigned to supply you therewith, then and in such event, the undersigned authorizes you to borrow any security, commodity, or other property necessary to make delivery thereof, and the undersigned hereby agrees to be responsible for any loss which you may sustain thereby and any premiums which you may be required to pay thereon, and for any loss which you may sustain by reason of your inability to borrow the security, commodity, or other property sold.

11. At any time and from time to time, in your discretion, you may without notice to the undersigned, apply and/or transfer any or all monies, securities, commodities and/or other property of the undersigned interchangeably between any accounts of the undersigned (other than from Regulated Commodity Accounts).

12. It is understood and agreed that the undersigned, when placing with you any sell order for short account, will designate it as such and hereby authorizes

you to mark such order as being "short," and when placing with you any order for long account, will designate it as such and hereby authorizes you to mark such order as being "long." Any sell order which the undersigned shall designate as being for long account as above provided, is for securities then owned by the undersigned and, if such securities are not then deliverable by you from any account of the undersigned, the placing of such order shall constitute a representation by the undersigned that it is impracticable for him then to deliver such securities to you but that he will deliver them as soon as it is possible for him to do so without undue inconvenience or expense.

13. In all transactions between you and the undersigned, the undersigned understands that you are acting as the brokers of the undersigned, except when you disclose to the undersigned in writing at or before the completion of a particular transaction that you are acting, with respect to such transaction, as dealers for your own account or as brokers for some other person.

14. Reports of the execution of orders and statements of the account of the undersigned shall be conclusive if not objected to in writing, the former within two days, and the latter within ten days, after forwarding by you to the undersigned by mail or otherwise.

15. Communications may be sent to the undersigned at the address of the undersigned given below, or at such other address as the undersigned may hereafter give you in writing, and all communications so sent, whether by mail, telegraph, messenger or otherwise, shall be deemed given to the undersigned personally, whether actually received or not.

16. Any controversy between you and the undersigned arising out of or relating to this contract or the breach thereof shall be settled by arbitration, in accordance with the rules, then obtaining, of either the Arbitration Committee of the Chamber of Commerce of the State of New York, or the American Arbitration Association, or the Arbitration Committee of the New York Stock Exchange, as the undersigned may elect. If the undersigned does not make such election by registered mail addressed to you at your main office within five (5) days after receipt of notification from you requesting such election, then the undersigned authorizes you to make such election in behalf of the undersigned. Any arbitration hereunder shall be before at least three arbitrators and the award of the arbitrators, or of a majority of them, shall be final, and judgment upon the award rendered may be entered in any court, state or federal, having jurisdiction.

17. This agreement and its enforcement shall be governed by the laws of the State of New York and its provisions shall be continuous; shall cover individually and collectively all accounts which the undersigned may open or re-open with you, and shall enure to the benefit of your present firm, and any successor firm or firms, irrespective of any change or changes at any time in the personnel thereof, for any cause whatsoever, and of the assigns of your present firm or any successor firm, and shall be binding upon the undersigned, and/or the estate, executors, administrators and assigns of the undersigned.

18. The undersigned represents that he is of full age; that no one except the undersigned has an interest in account or accounts of the undersigned with you; that the undersigned is not an employee of any exchange, or of any corporation of which any exchange owns a majority of the capital stock, or of a member of any exchange, or of a firm registered on any exchange, or of a bank, trust company, insurance company or of any corporation, firm or individual engaged in the business of dealing, either as broker or as principal, in securities, bills of exchange, acceptances or other forms of commercial paper.

Dated \_\_\_\_\_  
\_\_\_\_\_ Customer  
\_\_\_\_\_  
\_\_\_\_\_  
(City) (State) Address

Witness,

\_\_\_\_\_

We hereby accept the account, and agree to act as brokers upon the terms and conditions hereinabove stated.

\_\_\_\_\_  
By \_\_\_\_\_



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## APPENDIX D

### OPTION CONTRACTS

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#### PUT

This contract must be presented to the Cashier of the firm it is endorsed by before the expiration of the exact time limit  
(It will not be accepted after it has expired and cannot be exercised by telephone)

New York, ..... 19---  
For value received the bearer may deliver to the endorser on one day's notice except last day when notice is not required ..... shares of the ..... stock of the ..... at ..... dollars per share any time in ..... days from date.

All dividends for which transfer books close during said time go with the stock.

Expires ..... 19---

..... M. ....

Delivery according to S.E. usage.

#### CALL

This contract must be presented to the Cashier of the firm it is endorsed by before the expiration of the exact time limit.  
(It will not be accepted after it has expired and cannot be exercised by telephone.)

New York, ..... 19---  
For value received the bearer may "Call" on the endorser on one day's notice except last day when notice is not required ..... shares of the ..... stock of the ..... at ..... dollars per share any time in ..... days from date.

All dividends for which transfer books close during said time go with the stock.

Expires ..... 19---

..... M. ....

Delivery according to S.E. usage.

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## APPENDIX E

# INVITATION FOR BIDS ON SALE OF SECURITIES

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SALE OF SECURITIES BY  
THE CHESAPEAKE AND OHIO RAILWAY COMPANY  
NOTICE AND SPECIFICATIONS

(1) Pursuant to the regulations prescribed by the Interstate Commerce Commission in its Order of October 6, 1919, as amended October 4, 1920, in its Docket Ex Parte No. 54, The Chesapeake and Ohio Railway Company (hereinafter called the "Company") hereby requests bids for the purchase of \$2,500,000 par amount of its Equipment Trust Certificates, to be known as "Chesapeake and Ohio Railway Second Equipment Trust of 1944, Serial Equipment Trust Certificates," having the following terms, provisions, and security:

(a) The said Equipment Trust Certificates are to be issued under an Agreement to be dated July 15, 1944, between H. C. Strong and A. M. Waldron, Vendors, Continental Illinois National Bank and Trust Company of Chicago, Trustee, and the Company, whereunder the railroad equipment described in paragraph (b) is to be held by said Trustee in trust for the equal benefit of the holders of said Certificates;

(b) The said Equipment Trust Certificates are to be issued to provide, in part, funds required for the acquisition of 1,250 fifty-ton all-steel hopper cars, to cost approximately \$3,213,850, which equipment will be leased by said Trustee to the Company by Lease to be dated July 15, 1944;

(c) The said Equipment Trust Certificates will be of the aggregate principal amount of \$2,500,000, will be dated July 15, 1944, will mature serially in equal annual installments from July 15, 1945, to July 15, 1954, both inclusive, and will be guaranteed as to principal and dividends by the Company. These certificates will bear dividend warrants at a rate per annum to be named by the successful bidder, payable January 15 and July 15 in each year.

(2) The Company invites bids on the form available upon application at the office of the undersigned, and all information required in said form must be submitted. Each bid should specify the dividend rate to be borne by the certificates, which must be some multiple of one-eighth of one per cent and must be the same for all maturities. No bid for less than 99 per cent of par plus accrued dividends from July 15, 1944, to the date of delivery, will be considered.

(3) Each bid must be enclosed in a plain envelope securely sealed, bearing no indication of the name of the bidder or the amount of the bid, and shall be marked "Bid under proposed Contract No. 3 for Chesapeake and Ohio Railway Second Equipment Trust of 1944, Serial Equipment Trust Certificates," and shall be addressed to the undersigned at his office at 3400 Terminal Tower, Cleveland 1,

Ohio. All bids must be received on or before twelve o'clock noon, Eastern Standard Time, July 13, 1944. Bids so received will be opened by the undersigned, or in his absence, by A. M. Waldron, Assistant Treasurer of the Company, at said office immediately after twelve o'clock noon, Eastern Standard Time, July 13, 1944.

(4) All bids are to be submitted subject to the approval of the Interstate Commerce Commission of the assumption by the Company of obligation and liability in respect of these certificates. The Company reserves the right to reject any and all bids. Notice of acceptance of the most favorable bid, subject to the approval of the Interstate Commerce Commission, will be telegraphed to the successful bidder not later than three o'clock p.m., Eastern Standard Time, July 13, 1944.

(5) Delivery of the Equipment Trust Certificates, in temporary or definitive form, will be made against payment in full therefor to Continental Illinois National Bank and Trust Company of Chicago, Trustee, at its principal office in the City of Chicago, State of Illinois, on such date as the Company may designate on five days' notice to the successful bidder, such date of payment to be as soon as practicable after the Interstate Commerce Commission shall have authorized the assumption of obligation and liability by the Company in respect of said certificates and approved the bid or bids, but not later, however, than fifteen days after the date of such authorization and approval, and not earlier in any event than July 15, 1944. If the Interstate Commerce Commission shall not have given its authorization and approval as aforesaid on or before August 15, 1944, then the successful bidder may withdraw the bid by delivering written notice of withdrawal to the Company not later than August 20, 1944.

(6) Copies of the proposed form of Equipment Trust Agreement and Lease, and the form for submission of bids, are available upon application at the office of the undersigned.

H. F. Lohmeyer,  
Secretary and Treasurer,  
The Chesapeake and Ohio Railway Company  
3400 Terminal Tower,  
Cleveland, Ohio.

Dated: June 29, 1944.

THE COMPTROLLER OF THE STATE OF NEW YORK  
WILL SELL AT HIS OFFICE AT ALBANY, NEW YORK

MARCH 1, 1944, AT 12 : 30 O'CLOCK P.M.

\$8,330,000

Housing (Serial) Bonds

OF THE

State of New York

Bonds will be issued in coupon form in the denominations of \$1,000 and in registered form in denominations of \$1,000, \$5,000, \$10,000 and \$50,000 at the option of the purchaser, will be dated March 2, 1944, and will mature \$170,000 annually on March 2 in each of the years 1946 to 1994, both inclusive, interest being payable semi-annually on September 2 and March 2. The Comptroller reserves to the State the privilege of redeeming at par value and accrued interest, on March 2, 1964, or on any interest payment date thereafter, all of such bonds then outstanding, or all of the bonds of a single maturity beginning in the inverse order of their maturity, upon not less than thirty nor more than forty days' notice thereof published in at least two daily newspapers printed in the City of New York and one in

the City of Albany. Interest shall cease to accrue on bonds called for redemption, from and after the date fixed for the redemption thereof.

Principal and interest will be payable in lawful money of the United States of America, at the Bank of the Manhattan Company, New York City. The bonds may be registered as to principal and interest.

Said bonds will be issued under the provisions of Sections 2 and 3 of Article 18 of the State Constitution, Chapter 946 of the Laws of 1939, as amended, and Section 60 of the State Finance Law, for the purpose of providing moneys out of which to make loans to cities, towns, villages and authorities for and in aid of low rent housing for persons of low income as defined by law, or for the clearance, replanning, reconstruction and rehabilitation of substandard and insanitary areas, or for both such purposes, and for recreational and other facilities incidental or appurtenant thereto.

Bidders will be required to name the rate of interest which the bonds are to bear, not exceeding four per centum per annum, in a multiple of one-quarter or one-tenth of one per centum. Not more than a single rate of interest shall be named for the issue.

Bidders may condition their bids upon the award to them of all but no part of the entire \$8,330,000 bonds, and the highest bidder on the basis of "all or none" will be the one whose bid figures the lowest interest cost to the State after deducting the amount of premium bid, if any.

No bid will be accepted for separate maturities. Bidders shall state clearly in their proposals the amount and price for each \$100 bid for, which will be deemed to include an equal face amount of bonds of each maturity based upon the multiples specified above.

No bid will be accepted for less than the par value of the bonds and accrued interest to the date of delivery, or unless accompanied by a deposit of money or by a certified check or bank draft upon a solvent bank or trust company of the City of Albany or New York, payable to the order of the "Comptroller of the State of New York" for at least two per cent of the par value of the bonds bid for. No interest will be allowed upon the good faith check.

All proposals, together with the security deposits must be enclosed in a sealed envelope endorsed "Proposal for Bonds" and directed to the "Comptroller of the State of New York, Albany 1, N. Y."

Interim certificates will be issued pending the delivery of definitive bonds. Such certificates will be ready for delivery on or about March 2, 1944.

The unqualified approving legal opinion of Nathaniel L. Goldstein, Attorney-General of the State, as to the legality of such bonds and interim certificates and the regularity of their issue, will be furnished to the successful bidder upon delivery of the interim certificates to him.

The successful bidder or bidders will be required to pay for the bonds upon delivery of the interim certificates, by deposit in the Bank of the Manhattan Company in the City of New York.

The Comptroller reserves the right to reject any or all bids.

Circulars descriptive of the bonds will be mailed upon application to Frank C. Moore, State Comptroller, Albany 1, N. Y.

Dated: February 23, 1944.

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